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1920/21

OFFICIAL REGISTER  
OF  
PRINCETON UNIVERSITY

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VOLUME XII

JUNE, 1920

NUMBER 1

---

Undergraduate Announcement  
1920-1921



Published by Princeton University  
PRINCETON, NEW JERSEY

OFFICIAL REGISTER OF PRINCETON UNIVERSITY

*[Entered as second-class matter, December 23, 1909, at the Post Office at Princeton, N. J., under the Act of July 16, 1894.]*

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These publications include:

Calendar, Officers, Committees, Plan of Study, Departments, etc.  
Reports of the President and the Treasurer.  
Undergraduate Announcement.  
Graduate School and School of Electrical Engineering.  
Annual Catalogue.

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PRINCETON UNIVERSITY

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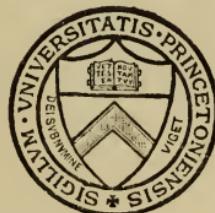
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## CALENDAR

## 1920

Jan. 5, 11 a. m. Christmas recess ends.

Jan. 7-21. Conferences with advisors on Second Term Electives.

Jan. 8. Winter meeting of the Board of Trustees.

Jan. 19. Meeting of Committee on the Course of Study on changes in prospectus of First Term (1920-1921).

Jan. 21. Last date for filing Second Term Electives.

Feb. 4. Mid-year examinations begin.

Feb. 10. First Term ends.

Feb. 11. Second Term begins. Class exercises will be suspended until February 16 at 8 a. m.

Feb. 16. Last meeting of Committee on the Course of Study on prospectus of First Term (1920-1921).

Feb. 22. Washington's Birthday.

Mar. 1. Last date for filing applications for fellowships and graduate scholarships. Office of the Dean of the Graduate School.

Mar. 3. Last date for filing course descriptions for Undergraduate Announcement. Office of the Secretary of the University.

Mar. 3. Stated meeting of the Faculty Committee on the Course of Study.

Apr. 1, 2 p. m. Easter recess begins.

Apr. 4. Easter Sunday.

Apr. 5, 11 a. m. Easter recess ends.

Apr. 8. Spring meeting of the Board of Trustees.

May 8-22. Conferences with advisors on First Term (1920-1921) Electives.

May 13. First Part of examination for degree of Doctor of Philosophy.

May 22. Last date for filing First Term 1920-1921) Electives.

May 27. Senior examinations begin.

June 2. Senior examinations end.

June 5-11. Underclass final examinations.

June 7. Last date for filing applications for the Master's degree.

June 13. Baccalaureate Sunday.

June 14. Commencement meeting of the Board of Trustees. Class Day.

June 15. Commencement Day. Election of Alumni Trustee.

June 21-26. College Entrance Board examinations for admission. Held in Princeton and elsewhere.

Sept. 13-27. Examinations for removal of F conditions.

Sept. 20-23. Examinations for admission. Held in Princeton only.

Sept. 21. Last date for making necessary changes in Electives.

Sept. 27, 2 p. m. Meeting of the Freshman Class, McCosh 50. Attendance compulsory.

Sept. 28. Formal opening exercises. Marquand Chapel, 3 p. m.

Oct. 14-16. First part of examination for degree of Doctor of Philosophy.

Oct. 18. Meeting of Committee on Course of Study on changes in prospectus of Second Term (1920-1921).

Oct. 28. Fall meeting of the Board of Trustees.

Nov. 1. Last date for corrections in prospectus of Second Term (1920-1921).  
Nov. 15. Second Term prospectus presented.  
Nov. 25. Thanksgiving Day.  
Dec. 18. Christmas recess begins.

**1921**

Jan. 5, 11, a. m. Christmas recess ends.  
Jan. 6-20. Conference with advisors on Second Term (1920-1921) Electives.  
Jan. 13. Winter meeting of the Board of Trustees.  
Jan. 17. Meeting of Committee on Course of Study on changes in prospectus of First Term (1921-1922).  
Jan. 20. Last date for filing Second Term (1920-1921) Electives.  
Jan. 27. Last date for making necessary changes in Second Term (1920-1921) Electives.  
Feb. 2. Mid-year examinations begin.  
Feb. 8. First Term ends.  
Feb. 9. Second Term begins. Class exercises will be suspended until February 14 at 8 a. m.  
Feb. 21. Last meeting of Committee on Course of Study on prospectus of First Term (1921-1922).  
Feb. 22. Washington's Birthday.  
Mar. 1. Last date for filing applications for fellowships and graduate scholarships. Office of the Dean of the Graduate School.  
Last date for filing course descriptions for Undergraduate Announcement. Office of the Secretary of the University.  
Mar. 24, 2 p. m. Easter recess begins.  
Mar. 27. Easter Sunday.  
Mar. 28, 11 a. m. Easter recess ends.  
Apr. 14. Spring meeting of the Board of Trustees.

May 12-14. First Part of examination for the degree of Doctor of Philosophy.

May 13-27. Conferences with advisors on First Term (1921-1922) Electives.

May 27. Last date for filing First Term (1921-1922) Electives.

June 2. Last date for filing applications for the Master's degree.

June 2-8. Senior final examinations.

June 10-17. Underclass final examinations.

June 19. Baccalaureate Sunday.

June 20. Class Day. Commencement meeting of the Board of Trustees.

June 20-25. College Entrance Board examinations. Held in Princeton and elsewhere.

June 21. Commencement Day. Election of Alumni Trustee.

Sept. 20. Last date for making necessary changes in First Term Electives.

Sept. 12-26. Examinations for the removal of F conditions.

Sept. 19-22. Entrance examinations. Held at Princeton only.

Sept. 26, 2 p. m. Meeting of the Freshman Class, McCosh 50. Attendance compulsory.

Sept. 27. Formal opening exercises. Marquand Chapel, 3 p. m.

Oct. 13-15. First part of examination for the degree of Doctor of Philosophy.

Oct. 17. Meeting of the Committee on the Course of Study on changes in prospectus of Second Term (1920-1921) courses.

Oct. 27. Fall Meeting of the Board of Trustees.

Nov. 1. Last date for corrections in prospectus of Second Term (1920-1921) courses.

Nov. 21. Second Term prospectus presented.

Nov. 24. Thanksgiving Day.

Dec. 19. Christmas recess begins.

## JANUARY, 1920

Su	M	Tu	W	Th	F	S
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## MARCH, 1920

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## JUNE, 1920

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## JANUARY, 1921

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## FEBRUARY, 1921

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## MARCH, 1921

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## APRIL, 1921

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## MAY, 1921

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## JULY, 1921

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## AUGUST, 1921

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## SEPTEMBER, 1921

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## OCTOBER, 1921

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## STATED MEETINGS

The stated meetings of the Board of Trustees are held on the fourth Thursday in October, on the second Thursdays of January and April, and on Monday of Commencement Week.

Meetings of the Board 1920-1921: October 28, January 13, April 14, June 20.

The University Faculty meets at 5 p. m. on the first and third Mondays of each month during the academic year except when the University is not in session. It also meets immediately after the formal exercises on the opening day in September.

Meetings of the Faculty, 1920-1921: September 28, October 4, 18, November 1, 15, December 6, January 17, February 7, 21, March 7, 21, April 4, 18, May 2, 16, June 6.

## OFFICE HOURS

THE PRESIDENT OF THE UNIVERSITY: Nassau Hall, 11 a. m. to 1 p. m. daily.

THE TREASURER OF THE UNIVERSITY: Stanhope Hall, 9 a. m. to 4.30 p. m.; Saturdays, 9 a. m. to 12.30 p. m.

THE SECRETARY OF THE UNIVERSITY: Nassau Hall, 9 a. m. to 4.30 p. m.; Saturdays, 9 a. m. to 12.30 p. m.

THE REGISTRAR OF THE UNIVERSITY: Nassau Hall, 8.30 a. m. to 4.30 p. m.; Saturdays, 8.30 a. m. to 12.30 p. m.

THE CONTROLLER, THE SUPERINTENDENT OF GROUNDS AND BUILDINGS, THE UNIVERSITY POWER COMPANY, AND THE PURCHASING DEPARTMENT: Stanhope Hall, 9 a. m. to 4.30 p. m.; Saturdays, 9 a. m. to 12.30 p. m.

THE DEAN OF THE GRADUATE SCHOOL: Nassau Hall. Office open from 9 a. m. to 3 p. m.; Saturdays, 9 a. m. to

12 M.; July 1 to September 1, 9 A. M. to 12 M. Office hours of the Dean, 12 M. to 1 P. M. daily, except Saturday.

THE DEAN OF THE FACULTY: Dean's House 1:30 to 2:30 P. M. daily, except Saturday.

THE DEAN OF THE COLLEGE: Nassau Hall, 2 to 3 P. M. daily, except Saturday.

THE CLERK OF THE FACULTY AND THE EDITOR OF THE GENERAL BIOGRAPHICAL CATALOGUE: Nassau Hall, 9 A. M. to 4:30 P. M.; Saturdays, 9 A. M. to 12:30 P. M.

THE COMMITTEE ON ENTRANCE, Professor Buffum, Secretary: 60 Hodge Road, 1:00 P. M. daily.

THE COMMITTEE ON EXAMINATIONS AND STANDING, DEAN W. F. Magie, Chairman: Dean's House, 1:30 to 2:30 P. M., daily, except Saturday. F. L. Hutson, Recording Secretary, Registrar's Office.

THE COMMITTEE ON OUT-DOOR SPORTS, Professor McClenahan, Chairman: The Palmer Physical Laboratory, Room 207, 12:30 to 1 P. M. Mondays and Tuesdays; 12 M. to 1 P. M. Wednesdays, Thursdays and Fridays; or at the office of the Dean of the College, 2 to 3 P. M. daily, except Saturday.

THE COMMITTEE ON NON-ATHLETIC ORGANIZATIONS, Professor D. C. Stuart, Chairman: Room 208, Nassau Hall, 4 to 5 P. M. Mondays.

## INFORMATION

For catalogues and other numbers of the OFFICIAL REGISTER of Princeton University apply to the Secretary of the University, Princeton, New Jersey.

For information concerning entrance or courses of instruction apply to the Registrar of the University, Princeton, New Jersey.

For information concerning the Graduate School apply to the Dean of the Graduate School, Princeton, New Jersey.



PART II

ADMISSION TO PRINCETON  
UNIVERSITY



## ADMISSION TO PRINCETON UNIVERSITY

Princeton University offers: (1) *Undergraduate* courses in arts and sciences; (2) *Graduate* courses in arts and sciences; (3) *Technical* courses; and (4) maintains a Field Artillery Unit of the Reserve Officers Training Corps.

1. The plan of *Undergraduate* liberal studies provides two distinct courses, leading to bachelor degrees in four or three years.

First, the Bachelor of Arts course leading to the degree of A.B.

Second, the Bachelor of Science course, leading to the degree of B.S., and planned to be mainly scientific in trend.

2. The *Graduate* School offers advanced and research work in arts and sciences, leading to the degrees of Master of Arts (A.M.), Master of Fine Arts (M.F.A.), and Doctor of Philosophy (Ph.D.).

3. The *Technical* courses offered are: a four-year undergraduate course in Civil Engineering leading to the degree of Civil Engineer (C.E.); and a two-year graduate course in Electrical Engineering, leading to the degree of Electrical Engineer (E.E.).

4. The *Field Artillery* course extends through four academic years and two or three summer camps. It forms one of a student's elective subjects. Upon its satisfactory completion, provided he also is awarded his degree by the University, the candidate receives from the President of the United States a commission as Second Lieutenant of the Field Artillery Section of the Officers Reserve Corps.

## A. ENTRANCE EXAMINATIONS

## I. GENERAL INSTRUCTIONS

1. Candidates for admission to the freshman class of Princeton University must take the examinations of the College Entrance Examination Board in June or the examinations held in Princeton in September in the subjects required for admission. These examinations are held in June at various places throughout the country, and in September at Princeton only.

A list of centers at which the June examinations will be held is published about March 1, and may be obtained from the *Secretary of the College Entrance Examination Board, 431 West 117th Street, New York, N. Y.* A preliminary list will be found on page 28.

Requests for examinations in June at places not listed should be made to the Secretary of the Board not later than February 1.

For regulations governing admission to the September examinations, see page 30.

2. Applications for the June examinations should be sent to the *Secretary of the College Entrance Examination Board.*

3. School recommendations and testimonials of character are required of all candidates for admission and must be sent to the *Registrar of Princeton University, Princeton, N. J.*

4. For regulations governing registration and examination fees, see page 23. In addition to the examination fee, a matriculation fee of five dollars is required of each candidate on admission to the University.

5. For regulations governing admission from other colleges, or to special and partial courses, see pages 40-42.

6. All candidates are expected to appear promptly at the time set for an examination. No candidate will be allowed

to enter an examination later than a quarter of an hour after the scheduled time; and no candidate who has seen a question paper will be allowed to leave the examination until half an hour shall have elapsed.

Applicants who have any conditions or other deficiencies from the June examinations are required to remove them at the September entrance examinations.

Examinations at other than the specified times are granted only in very exceptional circumstances. An applicant for examination at a special time must present a satisfactory reason and obtain permission by writing to the Registrar and must pay a fee of \$10 for each subject, or part thereof, in which an examination is set. No special examinations are held outside of Princeton.

## II. PLANS OF ADMISSION

There are two plans of admission to Princeton University, the Old Plan and the New Plan.

### OLD PLAN

Under the Old Plan, a candidate must pass written examinations in all subjects required for admission as listed on pages 56 to 61; he may, however, on recommendation of the Committee on Entrance, be admitted with conditions. A candidate for admission under the Old Plan may take the so-called *Ordinary Examinations* of the College Entrance Examination Board, or the *Comprehensive Examinations* of the College Entrance Examination Board, or any suitable combination of them.

A testimonial of character and a recommendation from the school, designating the individual subjects which the candidate is to offer with the school's approval, must be forwarded to the Registrar of Princeton University at least

one week before the first day of the examinations.

*Preliminary Examinations.* Under the Old Plan a candidate may take examinations a year or more in advance of intended entrance to college and retain credit for subjects passed, provided he has been recommended for these examinations by his school. No credit for preliminary examinations will be given without the school recommendation.

#### NEW PLAN

Under the New Plan a candidate must send to the Registrar of Princeton University, besides a testimonial of character, the detailed statement described in the next paragraph. It must be signed by the principal of his school; it may be submitted on a blank furnished by the Registrar upon request or in some form convenient to the school; and it should be in the Registrar's hands early enough to allow the candidate to file his application with the Secretary of the College Entrance Examination Board in accordance with the regulations printed on page 23.

The statement should contain the following information regarding the candidate's school record: (a) The textbooks used in each year of his work in each subject; (b) The number of weeks devoted each year to each subject; (c) The number of hours per week devoted each year to each subject; (d) The grade attained each year in each subject, together with an explanation of the system of marking.

If the Committee on Entrance of Princeton University is satisfied from this statement that the candidate has completed a course of study fitting him for admission to the University and has attained satisfactory proficiency in his studies, permission to apply for examination under the New Plan will be granted and the candidate will be admitted without conditions upon passing *comprehensive examinations*.

tions in four specified subjects. These four subjects are generally those listed as required (not elective), under the requirements for admission to the various courses (see pages 56 to 61. These four examinations must be taken during one set of examinations and cannot be distributed over more than one set.

A student who fails in one of the four examinations in June, will have an opportunity to take the examination in that subject alone in September. If, however, he fails in two or more of the June examinations, he must repeat the examinations in all four subjects in September.

By a *Comprehensive Examination* is meant:

1. One that is adapted to such variety of school instruction as exists in the several subjects—that is, the question papers will not prescribe methods but will recognize the general principle that the schools determine how they shall teach a subject and that the college tests results or power.

2. One that is adapted to the different stages of training in the subjects in which the papers are set—that is, they will give boys opportunities to show their power, whether they have had the minimum or the maximum amount of training given in school. For example, the papers in Latin will be so framed as to enable a candidate who has had only two years of Latin to show that he has as much command over the language as can be expected from that amount of training, and they will be similarly useful for the candidate who has had three or four years of Latin.

### III. AURAL TESTS IN MODERN LANGUAGES

All candidates offering German, French or Spanish for admission will, in addition to the June or September written examinations, take the aural test given in September, as follows:

1. An aural test in Elementary German, French, or Spanish, designated German (x), French (x), and Spanish (x).
2. An aural test in Intermediate German, French, or Spanish, designated German (y), French (y), and Spanish (y).

A candidate's grade on these aural tests will be reckoned as an integral part of his final grade in the subject. Candidates who pass the written part of the examination but fail to pass the aural part will not be re-examined in the former. Candidates who fail in the written part of the examination, and pass only the aural part, must be re-examined in both parts.

#### DESCRIPTION OF AURAL TESTS.

The aural tests are supplementary to the written entrance examinations in the Modern Languages. They do not contemplate an increase in the length of time or the amount of work devoted in school to preparation for the present entrance requirements in German, French, and Spanish but are given with the view of encouraging secondary schools to lay greater emphasis on pronunciation, and ultimately of requiring an oral test in the Modern Languages for admission.

1. The aural test (x) in the Elementary requirement will be not more than forty-five minutes in length and will consist of three parts: (1) an exercise in writing easy German, French, or Spanish prose from dictation; (2) the reproduction in English of the content of a short "sight" passage in easy German, French, or Spanish prose, read aloud by the examiner; (3) writing in German, French, or Spanish answers to questions put by the examiner in that language on a short connected passage, read aloud by the examiner just before the questions are asked.

2. The aural test (y) in the Intermediate requirement will likewise be not more than forty-five minutes in length

and will consist of three parts: (1) an exercise in writing moderately difficult German, French, or Spanish from dictation; (2) the written reproduction in German, French, or Spanish of the content of a short "sight" passage of ordinary narrative German, French, or Spanish read aloud by the examiner; (3) writing in the respective language answers to questions put by the examiner in German, French or Spanish on a connected prose passage, read aloud by the examiner just before the questions are asked.

#### IV. JUNE EXAMINATIONS 1920

##### *Application and Fee*

All applications for examination must be addressed to the *Secretary of the College Entrance Board, 431 West 117th Street, New York, N. Y.*, and must be made upon a blank form to be obtained by applying to the Secretary of the Board.

Candidates who wish to take the Board's comprehensive examinations under the New Plan must make application on a special blank form to be obtained from the Secretary of the Board. No application to take these comprehensive examinations can be entertained by the Board unless the candidate has previously obtained permission from the Committee on Entrance of Princeton University. In this permission the particular examinations to be taken by the candidate must be specified. As the application to the Board must reach the Secretary on or before a specified date (see below), it will be necessary for the candidate to obtain this permission from the Committee on Entrance of Princeton University at a still earlier date.

In June, 1920, there will be separate blank forms for the "application for examination" and "certificate of recommendation." The former should be addressed to the *College*

*Entrance Examination Board, 431 West 117th Street, New York, N. Y.,* the latter to the *Registrar, Princeton University, Princeton, N. J.* Both forms may be obtained from the Secretary of the College Entrance Examination Board upon request by mail.

Provided that the application reach the College Entrance Examination Board not later than the date specified below, the examination fee will be \$6.00 if the candidate is to be examined in the United States or Canada, \$20.00 if the candidate is to be examined outside of the United States or Canada. The fee should be transmitted by postal order, express order, or draft on New York, should accompany the application, and should be payable to the College Entrance Examination Board.

Applications and fees of candidates who wish to be examined outside of the United States or Canada must reach the Secretary of the Board at least six weeks in advance of the examinations, that is, on or before May 10, 1920.

Applications and fees of candidates who wish to be examined at points in the United States west of the Mississippi River or in Canada must be received at least four weeks in advance of the examinations, that is, on or before May 24, 1920.

Applications and fees of candidates who wish to be examined at points in the United States east of or on the Mississippi River must be received at least three weeks in advance of the examinations, that is, on or before May 31, 1920.

When the candidate has failed to obtain the required blank form of application for examination, the usual examination fee will be accepted if the fee arrive not later than the specified date accompanied by a memorandum containing the name and address of the candidate, the exam-

ination center at which he wishes to present himself, and a list of all the subjects in which he may have occasion to take the Board's examinations.

Applications received later than the dates named will be accepted only upon payment of \$6.00 in addition to the usual fee.

A list of the places at which the examinations are to be held by the Board in June, 1920, will be published about March 1. Requests that the examinations be held at particular points, to receive proper consideration, should be transmitted to the Secretary of the Board not later than February 1.

#### SCHEDULE OF JUNE EXAMINATIONS, 1920

In June 1920 the schedule of the examinations will be as follows:

*Monday, June 21*

8.45 A. M.—9.30 A. M.

PERIOD FOR REGISTRATION OF CANDIDATES

9.30 A. M.—12.30 P. M.

Mathematics *A*, Elementary Algebra complete (three hours)

Mathematics *A1*, Algebra to Quadratics (two hours)

Mathematics *A2*, Quadratics and Beyond (two hours)

COMPREHENSIVE MATHEMATICS (three hours)

1.45 P. M.—2 P. M.

PERIOD FOR REGISTRATION OF CANDIDATES

2 P. M.—6 P. M.

Mathematics *CD*, Plane and Solid Geometry combined (three hours)

Mathematics *C*, Plane Geometry (two hours)

Mathematics *D*, Solid Geometry (two hours)

*Tuesday, June 22*

8.45 A. M.—9 A. M.

PERIOD FOR REGISTRATION OF CANDIDATES

9 A. M.—1 P. M.

English *A*, Grammar, Composition, and Reading (two hours)

English *B*, Grammar, Composition, and Study (two hours)

COMPREHENSIVE ENGLISH (three hours)

1.45 P. M.—2 P. M.

PERIOD FOR REGISTRATION OF CANDIDATES

2 P. M.—6 P. M.

Mathematics *B*, Advanced Algebra (two hours)

Mathematics *E*, Plane and Spherical Trigonometry (two hours)

Mathematics *F*, Plane Trigonometry (two hours)

*Wednesday, June 23*

8.45 A. M.—9.30 A. M.

PERIOD FOR REGISTRATION OF CANDIDATES

9 A. M.—1 P. M.

Latin *2*, Elementary Prose Composition (one hour)

Latin *4*, Cicero and Sight Translation of Prose (two hours)

Latin *124*, Latin *1*, *2* and *4* combined (three hours)

COMPREHENSIVE LATIN (three hours)

1.45 P. M.—2 P. M.

PERIOD FOR REGISTRATION OF CANDIDATES

2 P. M.—6 P. M.

Latin *3*, Second Year Latin (two hours)

Latin *5*, Virgil and Sight Translation of Poetry (two hours)

COMPREHENSIVE CHEMISTRY (three hours)

*Thursday, June 24*

8.45 A. M.—9.30 A. M.

PERIOD FOR REGISTRATION OF CANDIDATES

9 A. M.—1 P. M.

History *A*, Ancient (two hours)

History *B*, Mediaeval and Modern (two hours)

History *C*, Modern (two hours)

History *D*, English (two hours)

History *E*, American (two hours)

History *F*, Civil Government (two hours)

History *G*, American and Civil Government (two hours)

History *E*, Modern European (two hours)

COMPREHENSIVE HISTORY (three hours)

1.45 P. M.—2 P. M.

PERIOD FOR REGISTRATION OF CANDIDATES

2 P. M.—6 P. M.

French *A*, Elementary—First and Second Years (two hours)

French *B*, Intermediate—Third Year (two hours)

Spanish, Elementary—First and Second Years (two hours)

COMPREHENSIVE FRENCH (three hours)

*Friday, June 25*

8.45 A. M.—9 A. M.

PERIOD FOR REGISTRATION OF CANDIDATES

9 A. M.—1 P. M.

German *A*, Elementary—First and Second Years (two hours)

German *B*, Intermediate—Third Year (two hours)

COMPREHENSIVE GERMAN (three hours)

COMPREHENSIVE SPANISH (three hours)

1.45 P. M.—2 P. M.

PERIOD FOR REGISTRATION OF CANDIDATES

2 P. M.—6 P. M.

Chemistry (two hours)

Physics (two hours)

COMPREHENSIVE PHYSICS (three hours)

*Saturday, June 26*

8.45 A. M.—9 A. M.

PERIOD FOR REGISTRATION OF CANDIDATES

9 A. M.—1 P. M.

Greek *A1*, Grammar (one hour)

Greek *A2*, Elementary Composition (one hour)

Greek *BG*, Xenophon and Sight Translation (two hours)

COMPREHENSIVE GREEK (three hours)

1.45 P. M.—2 P. M.

PERIOD FOR REGISTRATION OF CANDIDATES

2 P. M.—4 P. M.

Greek *C*, Homer's Iliad (two hours)

#### JUNE EXAMINATIONS—PRELIMINARY LIST OF CENTERS

The following is a list of the more important places at which the Board will hold examinations in June, 1920. A more nearly complete list will be published about March 1, 1920.

ALABAMA, Birmingham, Montgomery.

ARKANSAS, Little Rock.

CALIFORNIA, Berkeley, Los Angeles.

COLORADO, Denver.

CONNECTICUT, Bridgeport, Danbury, Derby, Greenwich, Hartford, Meriden, Middletown, New Haven, Norwich, Norwalk, Willimantic, Waterbury, Winsted.

DELAWARE, Wilmington.

DISTRICT OF COLUMBIA, Washington.

FLORIDA, Jacksonville.

GEORGIA, Atlanta, Savannah.

IDAHO, Boise.

ILLINOIS, Chicago, Peoria.

INDIANA, Indianapolis, Terre Haute.

IOWA, Davenport, Des Moines, Dubuque.

KENTUCKY, Louisville.

LOUISIANA, New Orleans.

MAINE, Bangor, Portland.

MARYLAND, Baltimore.

MASSACHUSETTS, Amherst, Beverly, Boston, Cambridge, Fall River, Fitchburg, Great Barrington, Haverhill, Lowell, Lynn, New Bedford, Newburyport, Northampton, South Hadley, Springfield, Taunton, Tufts College, Wellesley, Williamstown, Worcester.

MICHIGAN, Detroit, Grand Rapids.

MINNESOTA, Minneapolis.

MISSOURI, Kansas City, St. Louis.

MONTANA, Helena.

NEBRASKA, Omaha.

NEW HAMPSHIRE, Concord, Exeter, Hanover, Manchester, Portsmouth.

NEW JERSEY, Asbury Park, East Orange, Montclair, Newark, New Brunswick, Passaic, Plainfield, Princeton, Summit, Trenton.

NEW YORK, Albany, Binghamton, Brooklyn, Buffalo, Elmira, Glens Falls, Ithaca, New York, Ogdensburg, Peekskill, Poughkeepsie, Rochester, Syracuse, Utica.

NORTH CAROLINA, Asheville.

OHIO, Cincinnati, Cleveland, Columbus, Dayton, Toledo, Youngstown.

OREGON, Portland.

PENNSYLVANIA, Erie, Harrisburg, Lancaster, Philadelphia, Pittsburgh, Reading, Scranton, Wilkes-Barre, Williamsport.

RHODE ISLAND, Newport, Providence, Westerly.  
SOUTH CAROLINA, Charleston.  
TENNESSEE, Memphis, Nashville.  
TEXAS, Austin, Dallas, Houston.  
UTAH, Salt Lake City.  
VERMONT, Bellows Falls, Burlington, Rutland.  
VIRGINIA, Richmond, Roanoke.  
WASHINGTON, Seattle.  
WISCONSIN, Milwaukee.  
HAWAII, Honolulu.  
CANADA, Montreal, Toronto.  
ENGLAND, London.  
FRANCE, Paris.

#### V. SEPTEMBER EXAMINATIONS AT PRINCETON, 1920

A candidate who proposes to take the entrance examinations at Princeton in September should apply to the Registrar of Princeton University on or before September 1.

At the September examinations only comprehensive question papers, prepared by the College Entrance Examination Board, will be used. These papers are adapted to both Old and New Plan candidates.

A fee of five dollars, payable to Princeton University preferably either by money order or check, is required for the September examinations. A receipt will be sent to the candidate, which he may be required to show to the examiner on registering for the examinations. A candidate who has not met these regulations for application and payment of fee may be admitted to the examinations, but the results of the examinations may be delayed. No report will be sent until the candidate's application and fee shall have been received.

## SCHEDULE OF SEPTEMBER EXAMINATIONS, 1920

In September 1920 the order of examinations will be as follows:

*Monday, September 20*

8.30 A. M.- 9.00 A. M.	Registration of all candidates
9.00 A. M.-12.00 M.	English
2.00 P. M.- 5.00 P. M.	Physics Chemistry

*Tuesday, September 21*

9.00 A. M.-12.00 M.	Latin
2.00 P. M.- 5.00 P. M.	French

*Wednesday, September 22*

9.00 A. M.-12.00 M.	Elementary Mathematics
2.00 P. M.- 5.00 P. M.	German Spanish

*Thursday, September 23*

9.00 A. M.-12.00 M.	History
2.00 P. M.- 5.00 P. M.	Greek Advanced Mathematics

*Tuesday, September 28*

## Aural Tests in Modern Languages

All candidates offering French, German or Spanish for admission are required, in addition to the written examination taken either in June or September, to take these aural tests. Candidates will be divided into alphabetical groups and will meet in the rooms of McCosh Hall as follows:

9.00 A. M.- 9.45 A. M.	French A	Elementary
A through D .....	McCosh	60
E " K .....	"	62
L " R .....	"	64
S " Z .....	"	66
10.00 A. M.-10.45 A. M.	French B	intermediate
A through D .....	McCosh	60
E " K .....	"	62
L " R .....	"	64
S " Z .....	"	66
11.00 A. M.-11.45 A. M.	German A	Elementary
A through D .....	McCosh	60
E " K .....	"	62
L " R .....	"	64
S " Z .....	"	66
12.00 M.-12.45 P. M.	German B	Intermediate
A through D .....	McCosh	60
E " K .....	"	62
L " R .....	"	64
S " Z .....	"	66
2.00 P. M.- 2.45 P. M.	Spanish A	Elementary
A through Z .....	McCosh	60

## B. FRESHMAN ENTRANCE REQUIREMENTS

The following pages state the entrance requirements for admission to the three undergraduate courses offered at Princeton University.

While provision is made whereby a substitute for Greek may be offered for admission to the course leading to the degree of Bachelor of Arts, and a substitute for Latin may be offered for admission to the course leading to the degree of Bachelor of Science, students preparing for admission to the Bachelor of Arts course are strongly advised to take both Greek and Latin, and those preparing

for admission to the Bachelor of Science course are strongly advised to take Latin, as constituting with Mathematics the best foundation for a liberal education in college studies.

A complete list of all entrance subjects, required and elective, will be found on page 61.

*NOTE.—These subjects, with suggestions as to preparation in them, are described in detail in a special circular of information issued by the College Entrance Examination Board and listed as Document No. 93.* Upon request to the College Entrance Examination Board a single copy of this document will be sent to any teacher, without charge. In general, a charge of ten cents (which may be remitted in postage stamps) will be made.

*All requests for this document should be addressed to the College Entrance Examination Board, 431 W. 117th St., New York, N. Y.*

#### BACHELOR OF ARTS

1. A candidate for admission to the course leading to the degree of Bachelor of Arts (A.B.), under the ordinary or "Old Plan" of admission is examined in:

##### *English 3 Units*

English A and B, or English comprehensive, *English Cp.*

##### *Latin, 4 Units*

Latin 2, 3, 4, 5, or

Latin 124, 5, or

Latin comprehensive, four years, *Latin Cp. 4*

##### *Mathematics, 3 Units*

Algebra A1 and A2, and Plane Geometry C or Elementary Mathematics comprehensive, three years,

*Mathematics Cp. 3*

##### *Greek or*

##### *Intermediate Modern Language, 3 Units*

Greek A1, A2, BG, C, or Greek comprehensive, three years,

*Greek Cp. 3*

French B Intermediate, or French comprehensive, three years, *French Cp. 3*

German B Intermediate, or German comprehensive, three years, *German Cp. 3*

Spanish comprehensive, three years, *Spanish Cp. 3*

and in subjects amounting to two (2) additional units from the following list of elective subjects:

	UNITS		UNITS
History (Ancient)	1	†Elementary Spanish	2
History (Med. and Mod.)	1	Intermediate Spanish	3
History (English)	1	Advanced Mathematics D	
History (American)	1	(Solid Geometry)	½
*History (Mod. Eur.)	1	Advanced Mathematics F	
†Elementary French	2	(Plane Trigonometry)	½
Intermediate French	3	Physics	1
†Elementary German	2	Chemistry	1
Intermediate German	3		

2. A candidate for admission to the course leading to the degree of Bachelor of Arts (A.B.), under the "New Plan" of admission, by means of comprehensive examinations, is examined in:

*English, 3 Units*

*Latin, 4 Units*

*Mathematics, 3 Units*

*Greek or Intermediate Modern Language, 3 Units*

and must present a satisfactory school certificate covering two (2) additional units from the list of elective subjects given in section I.

#### BACHELOR OF SCIENCE

1. A candidate for admission to the course leading to the degree of Bachelor of Science (B.S.), under the ordinary or "Old Plan" of admission is examined in:

\* No credit for Modern European History will be granted to candidates credited with either Mediaeval and Modern European History or English History.

† A language offered for 3 (or 4) units may not also be offered for 2 units.

*English, 3 Units*English A and B, or English comprehensive, *English Cp.**Mathematics, Elementary and Advanced, 4 Units*

Algebra A1 and A2, Plane Geometry C, Solid Geometry D,

Plane Trigonometry F, or

Advanced Mathematics comprehensive, four years, *Mathematics Cp. 4*

{ Latin, 4 Units, or

{*Intermediate Modern Language, 3 Units*

Latin 2, 3, 4, 5, or

Latin, 124, 5, or

Latin comprehensive, four years, *Latin Cp. 4*French B Intermediate, or French comprehensive, three years, *French Cp. 3*, orGerman B Intermediate, or German comprehensive, three years, *German Cp. 3*, orSpanish comprehensive, three years, *Spanish Cp. 3**Science, 1 Unit*

Physics, or

Chemistry

*Elementary Foreign Language, 2 (3) Units*French A Elementary, or French comprehensive, two years, *French Cp. 2*, orGerman A Elementary, or German comprehensive, two years, *German Cp. 2*, orSpanish A Elementary, or Spanish comprehensive, two years, *Spanish Cp. 2*, orLatin 3, or Latin comprehensive, two years, *Latin Cp. 2*, or Latin 124, or Latin comprehensive, three years, *Latin Cp. 3*.

(3 Units).

and in enough additional subjects from the list of elective subjects given in section 1 of the Bachelor of Arts requirements to total 15 units (see page 34).

A student who offers only two or three years of work in Latin, must offer an intermediate (three years) modern language.

2. A candidate for admission to the course leading to the

degree of Bachelor of Science (B.S.), under the "New Plan" of admission, by means of comprehensive examinations, is examined in:

*English, 3 Units*

*Mathematics Elementary and Advanced, 4 Units*

*Latin (four years), 4 Units or*

*Intermediate Modern Language, 3 Units*

and one of

*\*Latin (two years), 2 Units*

*\*Elementary Modern Language, 2 Units*

*Physics, 1 Unit*

*Chemistry, 1 Unit*

Such a candidate must also present satisfactory school certificates covering:

*Latin (2 years), or*

*Elementary Modern Language, 2 Units*

(if neither is offered for examination)

*Physics, or*

*Chemistry, 1 Unit*

(if neither is offered for examination)

and enough additional subjects from the list of elective subjects given in section 1 of the Bachelor of Arts requirements to total 15 units (see page 34).

#### CIVIL ENGINEER

1. A candidate for admission to the course leading to the degree of Civil Engineer (C.E.), under the ordinary or "Old Plan" of admission, is examined in:

*Two Elementary Foreign Languages, 4 Units*

*Latin 3, or Latin comprehensive, two years, Latin Cp. 2*

*French A, or French comprehensive, two years, French Cp. 2*

*German A, or German comprehensive, two years, German Cp. 2*

*Spanish A, or Spanish comprehensive, two years, Spanish Cp. 2*

*English, 3 Units*

*English A, B, or English comprehensive, English Cp.*

\* A language offered for 3 (or 4) units may not also be offered for 2 units.

*Mathematics, 4 Units*

Mathematics A (including A1, and A2), C, D, F, or Advanced Mathematics comprehensive, four years,

*Mathematics Cp. 4*

*Physics or*

*Chemistry 1 Unit*

and in enough additional subjects from the list of elective subjects given in section 1 of the Bachelor of Arts requirements to total 15 units (see page 34).

2. A candidate for admission to the course leading to the degree of Civil Engineer (C.E.), under the "New Plan" of admission, by means of comprehensive examinations, is examined in:

*English, 3 Units**Mathematics, 4 Units**An Elementary Foreign Language, 2 Units*

*Physics or Chemistry, or History, 1 Unit*

and must present satisfactory school certificates covering enough additional units from the list of elective subjects given in section 1 of the Bachelor of Arts requirements to total 15 units (see page 34).

## LIST OF ALL ENTRANCE SUBJECTS

## ORDINARY EXAMINATIONS

GREEK, 3 UNITS

A1. Greek Grammar

A2. Elementary Prose Composition

BG. Xenophon and Sight Translation and Prose

C. Homer, Iliad Bks. I-III

LATIN, 4 UNITS

3. Second Year Latin

2. Elementary Prose Composition. 4. Cicero and Sight Translation of Prose

## COMPREHENSIVE EXAMINATIONS

GREEK

Cp. 2. Two-year Greek (2)

Cp. 3. Three-year Greek (3)

LATIN

Cp. 2. Two-year Latin (2)

TABLE OF VALUES IN UNITS\*

REQUIRED SUBJECTS	Requirements for admission to the course leading to the degree of Bachelor of Arts	Units	Requirements for admission to the course leading to the degree of Bachelor of Science	Units	Requirements for admission to the course leading to the degree of Civil Engineer	Units
					Two Elementary Foreign Languages	
GREEK	Greek A1, A2, BG, C, or Greek Cp. 3, or An Intermediate Modern Language	3	Latin 2, 3, 4, 5, or Latin 124, 5, or Latin Cp. 4, or An Intermediate Modern Language	4	Latin 3, or Latin Cp. 2 French A, or French Cp. 2 German A, or German Cp. 2 Spanish A, or Spanish Cp. 2	4
REQUIRED	Latin 2, 3, 4, 5, or Latin 124, 5, or Latin Cp. 4	4	English A, B, or English Cp. Mathematics A1, A2, C, D, F, or Advanced Mathematics Cp. 4	4	Mathematics A1, A2, C, D, F, or Advanced Mathematics, Cp. 4	4
SUBJECTS	English A, B, or English Cp.	3	An Elementary Foreign Language	2	Physics or Chemistry	1
	Mathematics A1, A2, C, or Elementary Mathematics Cp. 3	3			Physics or Chemistry	1
ELECTIVE SUBJECTS	Greek A1, A2, BG, C or Greek Cp. 3 History A, or Ancient Cp. History B, or Med. and Mod. Cp.	3	History A, or Ancient Cp. History B, or Med. and Mod. Cp.	1	History A, or Ancient Cp. History B, or Med. and Cp.	1
	History C, or English Cp. History D, or American Cp. History E, or Mod. Europ. Cp.	1	History C, or English Cp. History D, or American Cp. History E, or Mod. Europ. Cp.	1	History C, or English Cp. History D, or American Cp. History E, or Mod. Europ. Cp.	1
Enough additional Units to make a total of 15.	French A, or French Cp. 2 French B, or French Cp. 3 German A, or German Cp. 2 Spanish A, or Spanish Cp. 2	3	French A, or French Cp. 2 French B, or French Cp. 3 German A, or German Cp. 2 German B, or German Cp. 3 Spanish A, or Spanish Cp. 2 Spanish Cp. 3	2	French A, or French Cp. 2 French B, or French Cp. 3 German A, or German Cp. 2 German B, or German Cp. 3 Spanish A, or Spanish Cp. 2 Spanish Cp. 3	2
	German A, or German Cp. 2 German B, or German Cp. 3 Spanish A, or Spanish Cp. 2 Spanish Cp. 3 Mathematics D, or Mathematics F, or Mathematics Cp. 4	3	Latin 3, or Latin Cp. 2 Latin 124, or Latin Cp. 3 Latin Cp. 4	2	Latin 3, or Latin Cp. 2 Latin 124, or Latin Cp. 3 Latin Cp. 4	2
			Physics	4	Physics	4
			Chemistry	1	Chemistry	1

\* A unit represents a year's work in a subject at a specified number of hours a week.

124. Latin Grammar, Composition and Cicero	Cp. 3. Three-year Latin (3)
5. Virgil and Sight Translation of Poetry	Cp. 4. Four-year Latin (4)
ENGLISH, 3 UNITS	ENGLISH
A. Grammar and Composition	Cp. English (3)
B. Literature	
MATHEMATICS, 4 UNITS	MATHEMATICS
A1. Algebra to Quadratics (1)	Cp. 3. Elementary Mathematics (3)
A2. Algebra, Quadratics and beyond (1)	Cp. 4. Elementary and Advanced Mathematics* (4)
C. Plane Geometry (1)	
D. Solid Geometry ( $\frac{1}{2}$ )	
F. Plane Trigonometry ( $\frac{1}{2}$ )	
FRENCH, 3 UNITS	FRENCH
A. Elementary (2)	Cp. 2. Two-year French (2)
B. Intermediate (3)	Cp. 3. Three-year French (3)
GERMAN, 3 UNITS	GERMAN
A. Elementary (2)	Cp. 2. Two-year German (2)
B. Intermediate (3)	Cp. 3. Three-year German (3)
SPANISH, 3 UNITS	SPANISH
A. Elementary (2)	Cp. 2. Two-year Spanish (2)
B. Intermediate (3)	Cp. 3. Three-year Spanish (3)
HISTORY, 2 UNITS: (Not more than two of)	HISTORY: (Not more than two of)
A. Ancient (1)	Ancient (1)
B. Mediaeval and Modern (1)	Mediaeval and Modern (1)
C. English (1)	English (1)
D. American (1)	American (1)
E. Modern European* (1)	Modern European* (1)
SCIENCE, 1 UNIT EACH	SCIENCE
Physics (1)	Physics (1)
Chemistry (1)	Chemistry (1)

\*This examination is so arranged that the candidate may offer in addition to Elementary Algebra and Plane Geometry either one or both of Solid Geometry and Plane Trigonometry.

\* No credit for Modern European History will be granted to candidates who are credited with either Mediaeval and Modern European History or English History.

### C. ASIATIC STUDENTS

Any candidate for admission who is a native of Asia, and not of American or European parentage, may offer, as a substitute for the regular requirement in Latin an equivalent in Arabic, Chinese, Sanskrit, or Pali. A candidate who wishes to make this substitution should notify the Registrar not later than March 1 of the year in which he plans to enter.

### D. ADMISSION TO SPECIAL COURSES

In exceptional cases students are admitted to the privileges of the University, not as members of any one of the four regular classes or as candidates for a degree, but are allowed to take special undergraduate courses, selected under the direction of the Faculty, in such a manner as to secure as full an employment of their time as in the regular course. Such students are listed as "Special Students not Candidates for a Degree," and are subject to the same regulations and discipline and to the same examinations in the studies pursued as other undergraduates.

A candidate for admission as a special student must present satisfactory testimonials of character, and will be expected to take the regular entrance examinations upon the subjects prerequisite to his courses and to pass a sufficient number to show that he has an amount of preparation equivalent to that required of regular students.

These special courses are not offered to those who attempt to enter the regular courses and fail to do so, nor to those who have failed in the regular courses.

When special students are finally leaving the University, certificates of proficiency, signed by the President and Registrar, may be granted them on report by the Committee on Examinations and Standing that they have completed the courses on their schedule.

## E. STUDENTS PURSUING PARTIAL COURSES

Students in the Princeton Theological Seminary, or other properly qualified persons, may be admitted to one or more undergraduate courses in the University. Such students shall be entered as undergraduates in the catalogue under the caption, Students Pursuing Partial Courses. Students in the Princeton Theological Seminary are admitted to these courses without charge; but other persons are charged at the rate of \$20.00 a course.

## F. ADMISSION FROM OTHER COLLEGES

A candidate for admission from another college must present a letter of honorable dismissal from the president or dean of that college.

A candidate for admission from a college to which he was admitted by certificate will be held for the Princeton freshman entrance requirements in each required entrance subject in the continuation of which his standing in his former college was not in the upper half of his class. Such of these requirements as are not satisfied by examination at the time of admission must be satisfied in accordance with the rules which apply to students regularly admitted upon examination.

The candidate's credits for courses taken in the college from which he comes will be accepted in so far as these courses are equivalent to courses given at Princeton. If his credits show that he has an amount of preparation equivalent to that required of a regular freshman, he will be admitted and will be classified as a "Student Qualifying for Regular Standing." He will be assigned to those courses for which he is qualified, preference being given to such of the required courses as he may not have had. If at the end of two terms of residence in Princeton his work has been satisfactory, he may be enrolled as a regular student, his

status being determined by his credits; or, in case he qualifies for it, he may receive a degree with the graduating class. In the meantime he will be subject to the same regulations and discipline as a regular student.

No person is admitted to the University as a candidate for a Bachelor's degree, or for the degree of Civil Engineer, after the beginning of the first term of the senior year.

#### G. REGULATION CONCERNING SECRET SOCIETIES

Immediately after the beginning of the academic year students entering the Undergraduate Department meet for matriculation; and at that time subscription to the following pledge is required by the Board of Trustees:

We, the undersigned, do individually for ourselves promise, without mental reservation, that we will have no active connection whatever with any secret society, nor be present at the meeting of any secret society in this institution so long as we are members of Princeton University, it being understood that this promise has no reference to the American Whig and Cliosophic Societies. We also declare that we regard ourselves bound to keep this promise and on no account whatever to violate it.

## PART III

### PLAN OF UNDERGRADUATE STUDY



## PLAN OF UNDERGRADUATE STUDY

The regular undergraduate curriculum extends through four academic years. Students of exceptional ability, however, may be graduated in three years on fulfilling the requirements stated in a subsequent section.

The undergraduate courses of study lead to the degrees of Bachelor of Arts, Bachelor of Science, or Civil Engineer.

The degree of Bachelor of Arts, (A.B.) is conferred upon candidates who offer Latin for entrance, take freshman Latin, and complete a total of 18 units of preparatory and college work in subjects included in the Division of Philosophy, Literature, and Art, and who also meet the requirements of a Division or of a Department of their choice.

The degree of Bachelor of Science (B.S.) is conferred upon candidates who take, in addition to the Mathematics and Science prescribed in General Regulations No. 5, (see "Requirements for Bachelor's Degrees") sufficient courses in Mathematics and Science to make a total of 9 units, and who also meet the requirements of a Division or of a Department of their choice.

The degree of Civil Engineer (C.E.) is conferred upon candidates who complete the full course in Civil Engineering, as outlined on succeeding pages.

The schedule of each candidate for a bachelor's degree normally consists of five courses of three hours a week.

The various courses offered are open only to students of the year to which the courses belong, except as students are permitted or required to take a course belonging to a preceding year.

### REQUIREMENTS FOR BACHELOR'S DEGREES

The requirements for the bachelor's degrees are planned to give the student a broad general training, preserving as

far as possible the type of the old American college course. In determining the requirements for each degree the preparatory and college work done by the student is treated as a whole.

For convenience these requirements are enumerated in terms of units to be taken in the several subjects, the unit of preparatory work being a Carnegie Unit, and the unit of college work being a one-year course. The units are distributed as follows:

Preparatory work,	15 units
College work (4 years)	20 "
Total	35

#### I. GENERAL REGULATIONS

1. Each candidate shall have training in English, two Foreign Languages, Mathematics and Science.
2. Each candidate shall take Physics or Chemistry in either freshman or sophomore year.
3. A freshman shall continue three of the following subjects offered for entrance: English, Foreign Language, Mathematics, Science. If conditioned in English on entrance, he shall take English in freshman year.
4. Each candidate shall take in sophomore year Philosophy 201, 202 and any subject or subjects necessary to complete the requirements defined in paragraph 5 below.
5. Each candidate shall have completed by the end of sophomore year

12	units of Language, including English,
6	" of Mathematics and Science (A.B. candidates may postpone one of these courses until junior year)
1	" of Philosophy
—	—
19	" of the 25 units necessary to complete sophomore year

6. A candidate for the degree of Bachelor of Science shall take before his junior year at least one college course in two of the following subjects: Physics, Chemistry, Biology.

## II. COURSE OF STUDY

### FRESHMAN YEAR

#### *Required Studies*

<i>A.B.</i>	<i>B.S.</i>
Latin; and the continuation of two of the following subjects offered for entrance:	Mathematics; and the continuation of two of the following subjects offered for entrance:
English	English
Foreign Language	Foreign Language
Mathematics	Science
Science	

In addition to the three courses required above a freshman shall choose two electives from the following list:

Latin	{ Historical Introduction to
{ Greek or	{ Politics and Economics
{ Beginning Greek	Mathematics
German	Physics
Spanish	Chemistry
French	Biology
English	Field Artillery

A course in Hygiene, two hours a week, first term, and a course in Physical Education, three periods a week, both terms, are also required of all freshmen, but the hours or periods of these courses are not to conflict with the hours regularly scheduled in the curriculum.

In determining his studies for freshman year, a student must proceed according to the General Regulations already specified.

## SOPHOMORE YEAR

*Required Studies*

<i>A.B.</i>	<i>B.S.</i>
Philosophy	Philosophy

and any subject or subjects necessary to make up the minimum requirements in Language and Mathematics and Science (see General Regulations No. 5.)

*Elective Studies*

A sophomore shall take five courses in all, choosing electives from the following list:

History	English
Economics	Mathematics
History of Architecture	Physics
Latin	Chemistry
Greek	Geology
French	Biology
German	Graphics (if Mathematics is taken)
Spanish or Italian	Field Artillery

## JUNIOR AND SENIOR YEARS

I. The Departments of Instruction are grouped in three Divisions, as follows:

## I. Philosophy, Literature, and Art:

(including Philosophy, Ancient and Modern Languages, English, Art and Archaeology).

NOTE: No student may choose this Division unless he has completed Entrance and Freshman Latin.

## II. History, Politics and Economics:

(including History and Politics, Economics and Social Institutions.)

## III. Mathematics and Science:

(including Mathematics, Astronomy, Physics, Chemistry, Biology, Geology, Mineralogy, Psychology.)

2. Each junior and senior shall take five courses each year.

3. In his junior year a student shall take three courses in a Division, and in his senior year three courses in the same Division, two of which shall be continuations of courses in his junior year, in the sense that a course and its successor are in the same Department.

4. In each Department there is at least one course in junior year and one in senior year open to students of the Division and open for election by students outside of the Division qualified to take the course. The other courses in the Department may be restricted to students who have shown a capacity for doing superior work, the specifications for admission to the courses being determined by the Department.

5. If a student so desires, and is qualified to do so (see preceding paragraph), he may take two courses in junior year and two in senior year in the same Department instead of taking three courses each year in a Division.

#### JUNIOR YEAR

[The numbers prefixed to the courses in the following list refer to the description of those courses on later pages. All courses three hours a week. First Term courses have odd numbers; Second Term courses have even numbers.]

#### I. DIVISION OF PHILOSOPHY, LITERATURE, AND ART

##### I. *Department of Philosophy*

Two courses throughout year required of Departmental students, one of which must be 301, 302. History of Philosophy.

301, 302. History of Philosophy

303. Principles of Psychology. 304. Advanced Logic  
(Advised elective: History 305, 306, Constitutional Government, History 307, 308, Jurisprudence.)

II. *Department of Classics*

303. Greek Comedy	305. Roman Satire
308. Latin Essays	309. Greek History
310. Roman History	311. Greek Tragedy
317. Latin Literature	318. Latin Literature
319. Theocritus	320. Plato
322. St. Paul	323. Greek Culture
324. Greek Tragic Drama	325, 326. Elementary Greek
330. Ancient Oriental Literature	

IIIa. *Department of Modern Languages. Germanic Section*

301, 302. German Literature (Opitz to Lessing)  
 303, 304. Goethe's Life and Works

IIIb. *Department of Modern Languages. Romanic Section*

301, 302. French Classical Literature  
 305. Italian. 306. Dante  
 307, 308. Spanish Literature

IV. *Department of English*

301. Shakespeare. 302. English Drama (History)  
 303. Elements of Poetry. 304. Elements of the English  
     Language  
 305. Chaucer. 306. Spenser and Milton  
 307, 308. Advanced Public Speaking

V. *Department of Art and Archaeology*

301. Ancient Art. 302. Mediaeval Art  
 303, 304. Ancient and Mediaeval Architecture  
 305. Elements of Architecture  
 306. Shades, Shadows and Rendering  
 308. Architectural Drawing

## II. DIVISION OF HISTORY AND POLITICS, AND ECONOMICS

VI. *Department of History and Politics*

301, 302. History of the United States  
 303, 304. Mediaeval History  
 305, 306. Constitutional Government  
 307. Constitutional Interpretation. 308. Jurisprudence  
 309. Greek History. 310. Roman History

(*Requisite cognate course*: Economics. 305, 306. Economics)

(*Advised elective*: Philosophy, 301, 302. History of Philosophy)

## VII. *Department of Economics and Social Institutions*

Three courses throughout year required of Departmental students

301. Elements of Economics. 302. Economic Problems

303. Elements of Accounting. 304. Principles of Accounting

306. Statistics

## III. DIVISION OF MATHEMATICS AND SCIENCE

### VIII. *Department of Mathematics*

301, 302. Algebra

303, 304. Projective Geometry

305, 306. Coördinate Geometry

307, 308. Analysis

309, 310. Analytical Mechanics

311, 312. Ballistics

### IX. *Department of Physics*

301, 302. Experimental Physics

303. Properties of Matter. 304. Heat

309, 310. Analytical Mechanics

#### *Honors Courses in Mathematics and Physics*

305, 306 A. Coördinate Geometry

307, 308 B. Analysis

309, 310 C. Analytical Mechanics

311, 312 D. Theoretical Physics

313, 314 E. Experimental Physics

### X. *Department of Astronomy*

301. Introduction to Astronomy; 302. Stellar Astronomy

(Cognate course required of candidates for Honors in Astronomy)

### XI. *Department of Chemistry*

General Physics required unless already taken.

*For students who take four years of Chemistry*

307. Quantitative Analysis II, and 303. Organic Chemistry I or

305. Physical Chemistry I.

308. Quantitative Analysis III, and 304. Organic Chemistry II or

306. Physical Chemistry II

*For students who take three years of Chemistry*

301. Qualitative Analysis, and 302. Quantitative Analysis I

303. Organic Chemistry I, or 305. Physical Chemistry I, and 304. Organic Chemistry II, or 306. Physical Chemistry II.

## XII. *Department of Biology*

301, 302. Botany

303. Comparative Osteology

304. Bacteriology

305. Invertebrate Zoölogy

306. Parasitology

(Students electing the Department take two courses throughout junior year. General Biology 201, 202 must be one of them, if not taken in sophomore year. Students who took Biology 201, 202 in sophomore year elect 303, 304, and 306 (*Requisite cognate course*: Chemistry 303, 304 through the year).

## XIII. *Department of Geology*

301, 302. Structural Geology

303, 304. Mineralogy

305, 306. General Palaeontology

[Either 304 or 306 must be taken; the other may be taken as a free elective]

(*Requisite cognate course*: Biology through the year, or Chemistry through the year, or Graphics and Surveying)

## XIV. *Department of Psychology*

305. General Psychology      306. Genetic Psychology

Junior courses which are not included in any one of the Departments above:

302. Surveying

302. Physical Geography  
Field Artillery

## SENIOR YEAR

## I. DIVISION OF PHILOSOPHY, LITERATURE, AND ART

I. *Department of Philosophy*

- 401. Fundamental Problems of Philosophy
- 402. Present Philosophical Tendencies
- 405. History of Greek Philosophy
- 407, 408. Ethics
- 410. Hellenistic and Patristic Philosophy
- 414. Philosophy of Religion
- 415. Philosophy and History of Modern Science

II. *Department of Classics*

- 401. Lucretius; 402. Roman Elegiac Poets
- 408. Greek Epic Poetry 411. Cicero's Political Writings
- 413. Tacitus 415. Greek Lyric Poets
- 416. Thucydides 420. Virgil
- 421, 422. Roman Law
- 423. English Literature and the Classics. 424. Classical Archaeology.

IIIa. *Department of Modern Languages. Germanic Section*

- 401, 402. German Literature since Goethe
- 403, 404. Modern Germany

IIIb. *Department of Modern Languages. Romanic Section*

- 401, 402. French Literature (Romantic Movement)
- 403, 404. French Literature (18th and 16th centuries)
- 405, 406. Advanced French Composition
- 407, 408. Dramatic Technique
- 409, 410. Spanish Literature
- 411, 412. Italian Literature

IV. *Department of English*

Three courses throughout year required of departmental students

- 401. English Literature of the 18th century
- 402. Literary History of American Ideals
- 403. Old English. 404. Old English Poetry
- 405. Wordsworth and Coleridge. 406. Victorian Literature
- 407, 408. Advanced Composition
- 409. English Literature and the Classics
- 411. English Poetry of the Nineteenth Century

V. *Department of Art and Archaeology*

- 401. Renaissance and Modern Sculpture; 402. Greek Sculpture
- 403. Revival of Painting in Italy. 404. Modern Painting
- 407. Perspective and Indication. 408. Applied Elements
- 405, 406. Classical Architecture
- 409, 410. Free-hand Drawing

## II. DIVISION OF HISTORY AND POLITICS, AND ECONOMICS

VI. *Department of History and Politics*

- 401, 402. Constitutional History of England.
- 403. American Colonies. 404. American Democracy
- 405. Local Government
- 406. Party System
- 407, 408. International Law and Diplomacy
- 409, 410. The Reformation
- 421, 422. Roman Law

VII. *Department of Economics and Social Institutions*

- 401. Money and Banking; 402. Public Finance
- 403. European Economic Policy
- 404. Social Economics
- 405. Labor Problems
- 407. Corporation Finance
- 408. Economics of Transportation

## III. DIVISION OF MATHEMATICS AND SCIENCE

VIII. *Department of Mathematics*

- 401, 402. Functions of a Complex Variable

IX. *Department of Physics*

- 401, 402. Advanced Experimental Physics
- 403, 404. Theoretical Physics

*Honors Courses in Mathematics and Physics*

- 403, 404. Differential Geometry.

- 409, 410. Analysis.

- 411, 412.c. Applied Mathematics: Electricity and Magnetism

- 413, 414. d. Thermodynamics.

- 415, 416.e. Experimental Physics

- 401, 402.f. Celestial Mechanics. (Astronomy 401, 402 f.)

X. *Department of Astronomy*

- 401, 402.f. Celestial Mechanics

- 403, 404. Practical Astronomy

**XI. Department of Chemistry**

*For students who take four years of Chemistry*

303. Organic Chemistry I, or 305. Physical Chemistry I and only one of 403. Quantitative Analysis IV, 405. Organic Chemistry III, 407. Physical Chemistry III and 409. Advanced Inorganic Chemistry I.

304. Organic Chemistry II or 306. Physical Chemistry II and only one of 404. Metallography, 406. Organic Chemistry IV, 408. Physical Chemistry IV and 410. Advanced Inorganic Chemistry II.

*For students who take three years of chemistry*

401. Quantitative Analysis II, and 303. Organic Chemistry I, or 305. Physical Chemistry I.

304. Organic Chemistry II, or 306. Physical Chemistry II and only one of 402. Quantitative Analysis III, 404. Metallography, 406. Organic Chemistry IV, 408. Physical Chemistry IV and 410. Advanced Inorganic Chemistry II.

**XII. Department of Biology**

Three courses throughout year required of departmental students

401. Comparative Anatomy of Vertebrates; 402. Embryology

403. Histology. 404. Histology, or 406. Palaeontology

407, 408. Physiology

409, 410. Genetics

412. Biological Chemistry

**XIII. Department of Geology**

Three courses throughout year required of departmental students

401, 402. Evolution of Organisms and Man

403, 404. Petrology

405, 406. Practical Geology

407, 408. Optical Mineralogy

409, 410. Economic Geology

**XIV. Department of Psychology**

403, 404. Experimental Psychology

416. History and Psychology of Education.

Senior courses which are not included in any one of the Departments above:

401, 402. Sanskrit  
401, 402. Heat Engines  
--- Field Artillery

### III. GRADUATION IN THREE YEARS

A student may qualify for graduation in three years if his work in the regular courses has been of superior excellence and if, during the two intervening summers, he has satisfactorily pursued independent study in accordance with the regulations given below. The purpose of this plan is to encourage good work and to facilitate admission to professional schools at the end of three years of undergraduate study.

1. The opportunity for graduation in three years is open to a student selecting either the departmental or the divisional plan in his last two years.

2. A student who has maintained a standing of first or second general group in his freshman year may on his request be enrolled as a candidate for graduation in three years. In his second year he will be allowed to choose junior courses which will enable him to meet, by the end of his third year, the departmental or divisional requirement for graduation.

A student who has fallen slightly short of second general group standing at the end of freshman year may, on motion of the Committee on the Course of Study, be enrolled as a candidate for graduation in three years.

3. A candidate for graduation in three years will follow courses of reading or of laboratory work during the summers. Each of these courses is intended to be the equivalent of a one-year regular course and is planned to test the student's capacity for independent study. Formal instruction need not be given in them, and their satisfactory com-

pletion will be determined by written reports and special examination.

4. A student who, because of illness, summer employment, or other valid reason, is unable to devote his summers to the work described in the preceding paragraph, may qualify for graduation in three years by the following alternative method: Under the supervision of the appropriate Departments he may, during his second and third years, in addition to his normal schedule pursue special courses equivalent in requirements to the summer courses. In pursuing these special courses he will be subject to the same regulations as to standing, reports, and preliminary and comprehensive examinations, as a student following the summer courses.

5. A candidate for graduation in three years will choose, in addition to the summer work, courses from the list open to students following the four-year plan. He will take all the regular term examinations, except those in his departmental or divisional subjects at the end of his third year. In their place he will take comprehensive examinations in those subjects, covering the work of his last two years and the two summers.

6. A student who shall have maintained a standing of first or second general group in his regular courses during the three years, and who shall have completed one course each summer as defined in Section 3, or one special course in each of his second and third years as provided in Section 4, with the same general grade of excellence as that expected in the regular courses, will be qualified for graduation.

#### METHOD OF UNDERGRADUATE INSTRUCTION

Instruction in Physics, Chemistry, Biology, and Astronomy is given not only by means of lectures and formal tests upon textbooks, but also by means of practical experimental work in the several laboratories and in the Observatory.

In Mathematics, besides the stated class exercises and occasional lectures, certain hours are set apart each week during which the instructors of the Department are accessible for informal consultation by all students who wish further explanation or discussion of such portions of their mathematical work as most interest them or give them the most difficulty. In Geology, similarly, there is field work and constant informal resort to the Geological Museum, added to frequent conferences with the instructors in the several courses on the reading assigned.

Instruction in what may be called the reading departments—Philosophy, History and Politics, Economics and Social Institutions, Art and Archaeology, and the languages, is given chiefly by means of informal conferences on the reading assigned. A "course" consists, not of the lectures given in connection with it or of the study of a particular textbook relied on by the lecturer, but of a prescribed body of reading to which the lectures given are complementary. In each course the student is made responsible to a particular preceptor for his reading, and reports to him once a week for conference. The student is expected to attend every conference, and may be absent only for unavoidable reasons. Failure to keep his preceptorial appointments will affect his final standing.

At each conference the preceptor usually meets from three to six of the men assigned him. The methods of conference differ, of course, with the character of the subject, but are always informal, being intended not as a quiz or recitation or lecture, nor as a method of coaching, but, so far as the preceptor is concerned, as a means of finding out how thoroughly and intelligently the student has done his reading, and, so far as the student is concerned, as a means of stimulation and enlightenment with regard to the study in hand. His work is explained to him where it is obscure,

and its scope and implications are extended out of the wider reading and maturer scholarship of the preceptor. Study centers upon these conferences, as in the scientific departments it centers upon the laboratory. They are meant to supply to study the life which it cannot have in the formal exercises of the classroom, and to bring the students into an intimate contact with their teachers which is hardly possible in other methods of instruction.

One result of this method of instruction is to lay the principal emphasis of work upon the constant reading required, upon what is ordinarily called "term work," rather than upon preparation for occasional examinations. In reckoning the "standing" of a student more weight is given to his work with his preceptor than to his performance in examination. Each preceptor is expected to report in departmental meeting upon the work of the men assigned him, and it is only upon his recommendation that they are admitted to examinations. He may recommend the debarment from examination of any of the men assigned to him who seem to have neglected their work or to have done it too indifferently. He makes no formal report to any university officer of their absences from his appointed conferences or of their attendance, but forms his own estimate of their thoroughness and faithfulness and gives his judgment upon the basis of an intimate observation.

Members of the Faculty of all ranks do "preceptorial" work; those who lecture or conduct the formal class exercises acting as preceptors as well as those who devote the principal part of their time to this special method of teaching.

## HONORS

1. Two kinds of Honors are awarded, whether the candidate follows the four-year plan or the three-year plan: *General Honors*, for work of superior excellence in all

courses, and *Special Honors*, for work of superior excellence in the courses of a Department.

2. *General Honors*, determined by the standing attained in all the courses taken, are awarded at the end of each year to each class according to the following standard:

Highest, for an average standing of 1.2 or better.

High, for an average standing of 1.2+ to 1.7;

Honors, for an average standing of 1.7+ to 2.2.

3. *Special Honors*, determined by the standing attained in the departmental courses of the junior and senior years, are awarded only at graduation and are of three grades:

Highest, for an average standing of 1;

High, for an average standing of 1+ to 1.5;

Honors, for an average standing of 1.5+ to 2.

4. A Department may require a candidate for Special Honors to take in each of his last two years a course, admission to which is limited to students capable of doing work of superior excellence.

5. A candidate for Special Honors who is a candidate for graduation under the four-year plan may substitute one of the summer courses of his Department for one of the courses of his last year.

## THE SCHOOL OF ENGINEERING

### COURSE OF STUDY

The Department of Civil Engineering was established in 1875 through the benefactions of the late Mr. John C. Green. Its purpose was to afford young men who wish an engineering education the opportunity of pursuing an engineering course in the liberal environment of a university.

The experience of the past forty-five years has only deepened the conviction of the essential wisdom of this conception, for an engineer of the highest type needs not only sound knowledge of fundamental sciences and methods, but also the enlightenment of a liberalizing spirit such as pervades and dominates a university.

The course in Civil Engineering is broad, and devoted mainly to those studies which are fundamental in the training of all engineers. The studies of the first two years, in especial, are in large measure non-technical and general in character, and it is possible for A.B. or B.S. students, by a proper choice of their studies in mathematics and science in their freshman year, to change to the engineering course at the close of that year.

Plans have been made, however, for the further expansion and development of the School of Engineering. The undergraduate curriculum will remain substantially as at present in the first three years, but opportunity for greater differentiation in the other principal fields of engineering, such as mechanical, electrical and chemical engineering, will be given, especially in the senior year.

The degree of Civil Engineer is now given upon the com-

pletion of the four-year course, but the plan in contemplation provides for a single bachelor degree in engineering at the close of the undergraduate course, the full engineering degrees being reserved for graduate or professional work, or both. This change may be made beginning with any class subsequent to that of 1922.

The present graduate course in the School of Electrical Engineering will co-ordinate with the undergraduate course in such a manner that the degree of Electrical Engineer may be obtained upon the completion of a fifth (or one additional) year of work. The plan also contemplates the development of graduate work in the other special fields of engineering as soon as practicable.

The following is the synopsis of the undergraduate course of study in civil engineering:

FRESHMAN YEAR

<i>First Term</i>		<i>Second Term</i>	
Mathematics 103 .....	3	Mathematics 104 .....	3
Physics, 101 or 103 .....	4	Physics 102 or 104 ....	4
Chemistry 101 or 103 ....	4	Chemistry 102 or 104 ..	4
English 101c .....	3	English 102c .....	3
Engineering Drawing 101 ..	3	Engineering Drawing 102 ..	1½
Hygiene .....	2	Surveying 102 .....	2½
Physical Education .....	3	Physical Education .....	3
<hr/>		<hr/>	
Total hours per week	22	Total hours per week	21

A course in Hygiene, two hours a week first term, and a course in Physical Education, three periods a week both terms, are required of all freshmen, but the hours or periods are not to conflict with the hours regularly scheduled in the curriculum.

Immediately following the close of the second term there will be a summer term of three weeks for field work in surveying.

## SOPHOMORE YEAR

<i>First Term</i>		<i>Second Term</i>	
Mechanics 205 .....	3	Mechanics 206 .....	6
Physics 205 .....	3	Physics 206 .....	3
Geology } or } .....	3	Chemistry 104 } or } .....	3
Elective .....		Elective .....	
Descriptive Geometry 201 ..	2	Descriptive Geometry 202 ..	2
Surveying 201 .....	3	Surveying 202 .....	3
Mathematics 203 .....	3	—	—
	—	Total hours per week	17
Total hours per week	17		

Students entering with preparatory school physics or chemistry will take the advanced course in that subject in freshman year. Those entering without chemistry and taking the beginning course 101, 102 in that subject in freshman year, will take the second term of the freshman advanced chemistry 104 in the sophomore year.

Students having a second term elective in their sophomore year, may, with the approval of the Engineering Department, postpone the geology of the first term until later in their course, in order to pursue an elective course throughout the year.

## JUNIOR YEAR

<i>First Term</i>		<i>Second Term</i>	
Mechanics of Materials 301.	4	Hydraulics 302 .....	4
Materials Laboratory 303 ..	2	Hydraulic Laboratory 304 ..	1
Kinematics 305 .....	2	Machine Design 306 .....	3
Electrical Engineering 307 ..	3	Electrical Engineering 308 ..	3
Thermodynamics 309 .....	3	Heat Power Engineering	
Railway Engineering 311 .....	3	310 .....	3
	—	Structures 312 .....	3
Total hours per week	17		
		Total hours per week	17

Immediately following the close of the second term there will be a summer term of three weeks, in which the civil engineers will complete a railroad survey.

## SENIOR YEAR

<i>First Term</i>		<i>Second Term</i>	
Principles of Economics 301.	3	Problems of Economics 302	3
English 401 .....	2	English 402 .....	2
Bridge Design 403 .....	4	Higher Structures 404 ....	4
Reinforced Concrete 405 ....	3	Concrete Construction 406	3
Electives .....	6	Electives .....	6
<hr/>		<hr/>	
Total hours per week	18	Total hours per week	18

Technical electives in civil engineering include, among others,

<i>First Term</i>		<i>Second Term</i>	
Water Power 407.....	3	Water Supply 408.....	3
Highway Engineering 409....	3	Sewerage 410.....	3
Railway Economics 411.....	3	Gas Engines 412.....	3
		Municipal Engineering 414	3

Opportunity for special work in technical or economic fields or of electing courses of a more liberal nature is afforded by the large number of elective hours in the senior year.

The following is the synopsis of the courses for the classes at present in the University, who will graduate in 1922 and 1921 respectively. The Class of 1920 will be the last one to graduate in the Three Year Intensive Course, established to meet war conditions.

## CLASS OF 1922

The course of study for junior and senior years will be the same as that outlined above. A year course in economics and a half year course in geology are required for graduation. Students who have already had a course in economics may either take an advanced course in this subject in the senior year or offer an elective in its place.

## CLASS OF 1921

## SENIOR YEAR

<i>First Term</i>		<i>Second Term</i>	
Principles of Economics 301	3	Problems of Economics 302	3
English 401 .....	2	English 402 .....	2
Bridge Design 403 .....	4	Higher Structures 404....	4
Concrete Constructions *406 .....	3	Water Power *407 and Hy- draulic Laboratory *304	4
Electives .....	6	Electives .....	6
<hr/>		<hr/>	
Total hours per week	18	Total hours per week	19

Technical electives include, among others,

<i>First Term</i>		<i>Second Term</i>	
Water Supply *408.....	3	Concrete Bridge Design	
Sewerage *410 .....	3	416 .....	3
Highway Engineering 409...	3	Gas Engines 412.....	3
Railway Economics 411.....	3	Municipal Engineering 414	3

\* Numbering indicates term position of courses subsequent to the year 1920-1921.



## PART IV

### DEPARTMENTS OF INSTRUCTION



## COURSES OF INSTRUCTION

[NOTE: Freshman courses are numbered between 101 and 200, sophomore courses between 201 and 300, junior courses between 301 and 400, senior courses between 401 and 500. Graduate courses are numbered from 501 upward.

All courses are three-hour courses unless otherwise described.

Odd numbered courses are offered in First Term, even numbered in Second Term.]

### I. DIVISION OF PHILOSOPHY, LITERATURE AND ART

#### I. DEPARTMENT OF PHILOSOPHY

THE PRESIDENT, PROFESSORS WARREN, JOHNSON, BOWMAN,  
SPAULDING, FITE (CHAIRMAN), WHITNEY, MC COMAS,  
AND LONGWELL, DR. COTTON, MR. MORE AND  
MR. HAWES

201, 202. Introduction to Philosophy: General Philosophy, Psychology, and Ethics. Sophomore required course. Lecturer, Professor Fite; classroom instructors, Professors Johnson, Bowman, Spaulding, Whitney, and Longwell.

301. History of Philosophy. Greek and Mediaeval Philosophy. Prerequisite to course 302. Lecturer, Professor \_\_\_\_\_; Preceptors, Professors Whitney, and Longwell.

302. History of Philosophy. Modern Philosophy. Prerequisite course, 301. Lecturer, Professor Longwell; Preceptors, Professors Spaulding, and Longwell.

303. Principles of Psychology. Nature and scope of psy-

chology; relation of body and mind; the subconscious; the stream of thought; the consciousness of self; emotion; voluntary activity, etc. Professor Johnson.

304. Logic. Professor Whitney.

\*401. Fundamental Problems of Philosophy. Professor —.

\*402. Present Philosophical Tendencies. Professor Spaulding.

\*405. History of Greek Philosophy. Professor Bowman.

\*407. Ethics. A general study of the moral problem and of the types of ethical theory. Lecturer, Professor Fite; Preceptor, Professor Johnson.

\*408. Social and Political Ethics. The bearing of ethical theory upon the relation of the individual to society. Lecturer, Professor Fite; Preceptor, Professor Whitney.

\*410. Hellenistic and Patristic Philosophy. A study of Greek thought, philosophical and religious, from Plato to Chrysostom. A knowledge of the Greek language is desirable, though not required. Mr. More.

\*414. Philosophy of Religion. The nature and meaning of religious experience in relation to conceptions of ultimate reality. Professor Longwell.

\*415. Philosophy and History of Modern Science. A non-technical course in the development of scientific thought from the time of Copernicus and Galileo to the present. Professor Spaulding.

## II. DEPARTMENT OF CLASSICS

DEAN WEST, PROFESSORS WESTCOTT, ROBBINS, PRENTICE, CAPPS, STUART, ABBOTT (CHAIRMAN), DAVID MAGIE, BASORE, JOHNSON, DEWING, AND WEBER

101, 102. Elementary Greek. For beginners. Open to students in all four classes. Professor Scoon.

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\* Also listed as a graduate course.

- 103. Selections from prose authors. For those who have taken course 101, 102, or have offered two units of Greek on entering the University. Professor Weber.
- 105. Plato. The *Apology*, the *Crito*, and selections from other dialogues. Open to those who have offered three units of Greek on entering the University, or have taken course 103, and to those who on finishing course 101, 102 are recommended for admission to this course. Professors Hutson and Johnson.
- 106. Herodotus, Book VII, and the *Alcestis* of Euripides. Professors Hutson and Johnson.
- 107. Pliny's *Letters*, Ovid, and Martial. The object of the course is to develop ability to read Latin at sight. Freshman course, required of all candidates for the degree of A.B. and an elective for candidates for the degree of B.S. Professors Westcott, Magie, Basore, Johnson, Dewing, Scoon and Weber.
- 108. Tacitus and one play of Terence. With the upper divisions the *Annals* will be read; with the lower, the *Agricola* and *Germania*. Freshman course, required of all candidates for the degree of A.B. and an elective for candidates for the degree of B.S. Professors Magie, Westcott, Basore, Johnson, Dewing and Weber.
- 201. Greek Tragedy. Selected Plays. Lectures on the development of the drama, on the presentation of plays, on the authors and their works. Professors Robbins and Capps.
- 202. The *Odyssey*. Lectures and assigned readings in the history of the epic and the romance. Professor Robbins.
- 203. Roman Drama, chiefly Plautus. Attention will be given to such subjects as the construction of the plot, the portrayal of character, and the presentation of

plays. Professors Abbott, Stuart, Magie, Basore and Dewing.

204. Horace and Catullus. Horace: *Odes* and *Satires*; Catullus: Selections. Professors West, Abbott, Stuart, Basore, Dewing and Scoon.

#### JUNIOR AND SENIOR YEARS

303. Greek Comedy. Two plays of Aristophanes will be studied closely, and a third read rapidly. Professor Capps.

305. Roman Satire. The *Satires* and the *Epistles* of Horace, and the *Satires* of Juvenal. In addition, selections from other writers, illustrative of the development of Roman Satire, will be read. Professor Stuart. [Not given, 1920-1921.]

308. Latin Literary and Historical Essays. The minor works of Tacitus, with a preliminary study of Horace's literary epistles. Professor Basore. [Not given, 1920-1921.]

309. Greek History. Two lectures will be given each week on Greek History. The third hour will be devoted to preceptorial conferences on reading, in English, on special topics. (May count as a course in History.) Professor Prentice.

310. Roman History to 400 A. D. Roman imperialism, and the main governmental, economic, social, and religious developments in the Republic and the Empire. (May count as a course in History.) Professor Johnson.

311. Greek Tragedy. Aeschylus and Sophocles. Selected plays. Professor Robbins. [Not given, 1920-1921.]

317. Latin Literature of the Republic. Professor Stuart.

318. Latin Literature of the Empire. Professor Basore.

319. Theocritus. Reading of Theocritus, Bion, and Moschus. [Not given, 1920-1921.]

320. Plato. *Phaedo, Protagoras, Gorgias, Symposium, Republic*, in whole or in part. Professor Scoon.

322. St. Paul. First and Second Epistles to the Corinthians; selections from the other Pauline Epistles. A study of the language and content, together with the historical and philosophical background. Professor Prentice. [Not given, 1920-1921.]

323. Greek Culture and Institutions: A study of the heritage of modern civilization from the ancient Greeks. Knowledge of the Greek language not required. [Not given, 1920-1921.]

324. Greek Tragic Drama. Use of the Greek language not required. Euripides: *Alcestis, Iphigenia among the Tauri*, and *Hippolytus*. Sophocles: *Oedipus Tyrannus* and *Philoctetes*. Aeschylus: *Agamemnon, Choephoroi* and *Eumenides*. The plots, dramatic composition and technique will be studied and criticized; the literary and dramatic value of the various scenes will be discussed. Also the characters, and the methods of delineation, the religious, moral, political, and social ideas contained in these plays, the civilization of the ancient Greeks, their ideals and standards, as exhibited in their drama. Written notes or brief essays will be required. Professor Prentice.

325, 326. Elementary Greek for students of Natural Science. A practical course designed to meet the needs of students of the natural sciences, and of mathematics and architecture, who have no knowledge of Greek. Special attention will be given to scientific nomenclature and the principles of word-formation as exemplified in the sciences. Open only to upperclassmen and graduate students. Professor Weber.

- \*401. Lucretius. Reading of selected books of the *De Rerum Natura*. Professor Basore. [Not given, 1920-1921.]
- 402. Roman Elegiac Poets. Lectures on the history of the elegy; reading of selections from Tibullus, Propertius, and from the *Amores of Ovid*. Professor Stuart.
- 408. Greek Epic Poetry. The *Iliad* will be read in class, two hours each week. The third hour will be given to lectures and conferences, collateral reading, and reports. Professor Prentice.
- 411. Cicero's Political Writings. Cicero's *De Republica* and *De Legibus*, together with some of his speeches and letters. Professor David Magie.
- \*413. Tacitus. The *Annals* and *Histories*. Professor Westcott. [Not given, 1920-1921.]
- 415. Greek Lyric Poets. A survey of Greek lyric poetry from the seventh century to the third century. Professor Robbins.
- \*416. Thucydides. Books VI and VII, Thucydides' account of the Sicilian Expedition will be read. Professor Capps.
- 420. Virgil. The *Bucolics*, portions of the *Georgics*, and the *Aeneid*, Books VII-XII. Study of the literary relationships, the poetic technique, and the significance from the standpoint of contemporaries of these works. Professor David Magie. [Not given, 1920-1921.]
- \*421, 422. Roman Law. The History and Institutes of Roman Law. Students in the Department of Classics, and others who desire to do so, will read the *Institutes* of Gaius and of Justinian in Latin. Professor Westcott.
- 423. (English 409). English Literature and the Classics; the quality of English Literature as variously determined by the influence of the Classics; the spirit of the

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\* Also listed as a graduate course.

Classics as manifest in the form and content of English Literature. Readings in some ten or fifteen authors, ancient and modern. Professor Osgood.

424. (Art 402.) Classical Archaeology. A general outline of Greek vase painting and a careful study of the most recent archaeological discoveries in architecture, sculpture, painting and the minor arts. Professor Elderkin; preceptors, Professors Elderkin and Smith.

Candidates for Honors in Classics are requested to consult Professor Robbins or Professor Basore.

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For graduate courses in classics, see under the Graduate School.

### III. DEPARTMENT OF MODERN LANGUAGES

PROFESSORS VREELAND, GAUSS (CHAIRMAN), BUFFUM, COLLINS, HOSKINS, PRIEST, MARDEN, ARMSTRONG, BENDER, STUART, CRITCHOW, KOREN, THAYER, CONS, AND CHAPMAN; MR. LANE, MR. MAUREY, MR. LIZASO.

#### GERMANIC SECTION

101, 102. Beginners' German. German will generally be used. Professor Bender.

103, 104. Intermediate German. Reading of short stories and descriptive prose, with exercises, syntax and composition. German will generally be used. Prerequisite: Entrance German A or German 101, 102. prerequisite to German 105, 106 and German 201, 202. Professor Bender.

105, 106. Advanced German. Reading of historical, descriptive, and narrative prose, with exercises in composition. German will generally be used. Prerequisite: Entrance German B or German 103, 104. Either German 105, 106 or German 201, 202 is prerequisite

to the courses of junior and senior years. Professor Thayer.

201, 202. German Literature since 1748. Prerequisite: Either Entrance German B or German 103, 104. Those electing the course will be divided into two groups: *a*. Those who have completed German 103, 104; *b*. Those who have completed German 105, 106. Either German 201, 202 or German 105, 106 is prerequisite to the courses of junior and senior years. Professors Priest and Thayer.

301, 302. German Literature from Opitz to Schiller. Lectures and collateral reading. Junior course, open to seniors. Prerequisite: Either German 105, 106 or 201, 202. Professor Priest.

303, 304. Goethe's Life and Works. Junior course, open to seniors. Prerequisite: either German 105, 106 or German 201, 202. Professor Priest.

\*401, 402. The Romantic School in Germany and German Literature since Goethe's death. Lectures and reading. Senior course, open to juniors. Prerequisite: either German 105, 106 or German 201, 202. Professor Thayer.

\*403, 404. Modern Germany. An historical survey of modern German political and social institutions. Senior course, open to juniors. Prerequisite; either German 105, 106 or German 201, 202. Professor Bender.

#### ROMANIC SECTION

101, 102. Beginners' French. Grammar, composition, and reading. French will generally be used. Professors Stuart and Koren.

103, 104. Intermediate French. Rapid reading, conversa-

\* Also listed as a graduate course.

tion, and composition. French will generally be used. Prerequisite: Entrance French A, or French 101, 102. Prerequisite to French 203, 204. Professors Buffum, Chapman, Cons, Critchlow and Mr. Lane and Mr. Maurey.

105, 106. Advanced French. French history and institutions. Composition and discussions. Prerequisite: Entrance French B or French 103, 104. French will be used exclusively. Professors Buffum, Gauss, Chapman, Critchlow, Cons, Mr. Lane and Mr. Maurey.

107, 108. Beginners' Spanish. Grammar, composition, and reading of modern Spanish authors. Freshman course open to sophomores. Prerequisite to Spanish 203, 204. Professors Marden and Critchlow, Mr. Lizaso.

201, 202. Sophomore French. General introduction to the study of French literature. Prerequisite: French 103, 104 or Entrance French B. Professors Vreeland and Stuart.

203, 204. Spanish. Readings from Spanish and Spanish-American authors, composition, and oral practice. Prerequisite: Spanish 101, 102. Professor Marden and Mr. Lizaso.

301, 302. French. French Classical Literature. Junior course, open to seniors. Prerequisite: French 201, 202. Professor Collins and Mr. Maurey.

305. Italian. Grammar, composition, and reading. Junior course, open to seniors. Prerequisite to Italian 306. Professor Koren.

306. Italian. The *Divina Commedia* of Dante. Junior course, open to seniors. Prerequisite: Italian 305. Prerequisite to Italian 411. Professor Gauss.

307, 308. Spanish. General survey of Spanish Literature.

Junior course, open to seniors. Prerequisite: Spanish 203, 204. Professor Critchlow.

\*401, 402. French. The Romantic Movement. Lectures and preceptorial reading. Senior course, open to juniors. Prerequisite: French 201, 202. Professors Gauss and Stuart.

\*403. French Literature of the Eighteenth Century. Senior course, open to juniors. Prerequisite: French 201, 202. Professor Stuart.

\*404. French Literature of the Sixteenth Century. Senior course, open to juniors. Prerequisite: French 201, 202. Professor Cons.

\*405, 406. Advanced French Composition, Pronunciation, and style. Senior course, open only to students in the Department of Romance Languages. Professor Armstrong.

\*407, 408. Dramatic Technique. Open to approved students. Professor Stuart.

\*409, 410. Spanish. Spanish Literature of the Seventeenth Century. Composition, essays. Prerequisite: Spanish 307, 308. Professor Marden.

\*411. Italian. Authors of the 15th and 16th centuries. Senior course, open to juniors. Prerequisite: Italian 306. Prerequisite to Italian 412. Professor Koren.

\*412. Italian. Modern Italian authors. Senior course, open to juniors. Prerequisite: Italian 411. Professor Koren.

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For graduate courses in Modern Languages, see under the Graduate School.

\* Also listed as a graduate course.

## IV. DEPARTMENT OF ENGLISH

PROFESSORS HENRY VAN DYKE, HARPER, PARROTT, COVINGTON, SPAETH, OSGOOD (CHAIRMAN), NOYES, GEROULD, ROOT, MAC DONALD, CROLL, KENNEDY, HEERMANCE, MURCH AND SHELLABARGER; MESSRS. MC-CALLUM, STONE, FISHER AND ENGLISH.

101, 102a. Literature and Composition. The aim of the course is to develop and train intelligent appreciation of the fundamental qualities of good literature and composition, such as imagination, clarity of thought, structure, and effective expression. This aim is accomplished by the reading and analysis of certain masterpieces of prose and verse from the later nineteenth century writers, English and American, and by the writing of frequent themes which shall express, under the stimulus of these masterpieces, the student's personal thought and observation. Elective, for A.B. and B.S. freshmen; required of C.E. freshmen. Professor Root and preceptors.

101, 102b. Public Speaking and Debate. Offered to freshmen who enter the Cliosophic or the American Whig Society who expect to specialize in debate. Substitute for 101, 102a. Limited to fifty men. Professor Covington.

201, 202. History of English Literature. A survey of English Literature from the earliest times to the Victorian Age. Lectures; oral and written recitations; reports on required reading. The reading in this course is designed to illustrate the various periods in the history of English Literature. Professor Heermance and preceptors.

301. English Drama: Shakespeare. A study of some of Shakespeare's representative plays. Divisional course. Professor Spaeth and preceptors.

302. English Drama: its History and Development. The development of the drama will be traced from its mediaeval origin to the nineteenth century. Special attention will be devoted to the Elizabethan drama, but characteristic specimens of the later drama under classical and romantic influences will also be read. Divisional course. Professor Parrott and preceptors.

\*303. Elements of Poetry. The object is to introduce the student to the understanding and enjoyment of poetry as an art. The nature of poetry as distinguished from the other arts; its origin; its kinds; the most important forms and their history. Restricted course. Professor Croll.

304. Elements of the English Language. A historical study of the words and forms of modern English. The nature and beginning of human speech; the growth of the English vocabulary; the decay of grammatical inflections; the meaning and connotation of words; "good English," dialects, slang; American English. The aim of the course is to give the student a wider and more intelligent command of the vocabulary and idiom of his native tongue. Restricted course. Professor Root.

305. Chaucer and Mediaeval Narrative. A study of mediaeval story-telling as practised by Chaucer and other writers of his age. It is the purpose of the course to introduce the student by this means to the life and ways of thinking characteristic of the Middle Ages. Restricted course. Professor Gerould.

\*306. Spenser and Milton. A study of their works and of their relation to the Renaissance and the Reformation. Restricted course. Professor Harper.

307, 308. Advanced Public Speaking. Open to students who have taken the freshman course in Public Speak-

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\* Also listed as a graduate course.

ing, and not to be taken as an alternative to other upper-class courses in the Department. Restricted course. Professor Covington.

401. English Literature of the Eighteenth Century. A study of the leading poets and prose writers from Swift to Burns, and of the literary and social ideas which they reflect. The Queen Anne wits and the school of sense; Sterne and the school of sensibility; Fielding and the beginnings of the English novel; Dr. Johnson and the Literary Club. Divisional course. Professor Root and preceptors.
402. The Literary History of American Ideals. Study of the development and expression of American ideals in their religious, political, cultural, and social aspects as reflected in the literature produced in America from Jonathan Edwards to Walt Whitman, both as an expression of the American spirit and in its relation to the main currents of European thought. The reading will accordingly include selections from British and Continental writers whose ideas have vitally influenced America, or who express a European assessment of American ideas. Divisional course. Professor Spaeth, and preceptors.
403. Old English. Introductory. A study of Old English grammar and syntax, and a general survey of Old English literature, with selected illustrative reading in prose and poetry. This course is designed to give the student a mastery of the forms of the language, and a knowledge of the history of the literature, in preparation for more advanced study of Old English. Restricted course: prerequisite to English 404. Professor Kennedy.
404. Old English Poetry. A study of *Beowulf*, with the reading, for purposes of illustrative comparison, of

selections from the Old English Christian poems. It is the design of this course, in connection with the reading of these poems, to acquaint the student with the structure of Old English poetry, its development in literary style, and the influence upon its development of historical, cultural, and literary factors. Restricted course: English 403 is prerequisite. Professor Kennedy.

405. Wordsworth and Coleridge. Their part in the Revolutionary movement and their service in renovating English poetry. Restricted course. Open to graduate students in 1921-1922 and alternate years thereafter. Professor Harper.

406. Victorian Literature. The main currents of thought, philosophical, social, and aesthetic, of the period from 1832 to the death of Tennyson, and the reflection of these tendencies in the literature of the age. Among the authors studied will be J. S. Mill, Newman, Carlyle, Ruskin, Arnold, Browning, Tennyson, Rossetti, Swinburne, and Morris. Restricted course. Professor Parrott.

407, 408. Advanced Composition. For specially qualified students. The course will be conducted in groups, and the individual student will be expected to practise composition in the particular form best suited to his powers and needs. Such forms may include the Essay, Narrative, Dramatic Writing, and Verse. Restricted course. Professor Shellabarger.

\*409. (Classics 423.) English Literature and the Classics. The quality of English Literature as variously determined by the influence of the Classics; the spirit of the Classics as manifest in the form and content of English Literature. Readings in some ten or fifteen

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\* Also listed as a graduate course.

authors, ancient and modern. If this is elected as an English course, the ancient authors will be read in the best English versions. Restricted course. Professor Osgood.

411. English Poetry of the Nineteenth Century. A study of some of the leading British and American poets. Divisional course. Professor van Dyke and preceptors.

*NOTE.—A student may be admitted to restricted courses in the Department if he has maintained a standing of third group or better in the last year of college English that he has taken.*

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For graduate courses in English, see under Graduate School.

#### V. DEPARTMENT OF ART AND ARCHAEOLOGY

PROFESSORS MARQUAND (CHAIRMAN), BUTLER, MATHER,  
MOREY, ELDERKIN, SMITH, AND MORGAN,  
MR. PARK AND MR. POTTER.

301 f. Ancient Art. A general outline of the history of ancient sculpture, painting, and the minor arts. Lectures and required reading. Lecturer, Professor Elderkin; preceptors, Professors Elderkin and Morey.

302 f. Mediaeval Art. A general outline of the history of Early Christian, Byzantine, Romanesque, and Gothic sculpture, painting, and the minor arts. Lecturer, Professor Morey; preceptors, Professors Morey and Smith.

303 f. Ancient Architecture. A course in the history of Egyptian, Assyrian, Persian, Greek, and Roman architecture. Junior course, open to approved sophomores. Prerequisite to course 407, 408. Lecturer, Professor

Butler; preceptors, Professors Butler, Smith, and Morgan.

304 *f*. Mediaeval Architecture. The history of Early Christian, Byzantine, Romanesque and Gothic architecture. Junior course, open to approved sophomores. Prerequisite course, Ancient Architecture 303. Lecturer, Professor Butler; preceptors, Professors Butler, Smith, and Morgan.

305. Elements of Architecture. The orders, moldings, masonry, walls, arches, doors, windows, stairs, pediments, ceilings, roofs, vaults, domes, etc. Lectures and draughting-room periods. Professor Morgan.

306. Shades, Shadows and Rendering. Short and direct methods for determining shades and shadows on architectural features, with applications by wash rendering in India ink and monotone. Prerequisite course, Elements of Architecture 305. Lectures and draughting-room periods. Professor Morgan.

308. Architectural Drawing. Practical training in the use of draughting instruments, in lettering and in drawing in pencil, pen and ink, and wash, from casts and photographs, and from nature. Instruction will consist of the criticism of the work done in the classroom under the personal supervision of the instructor. Mr. Park.

\*401. Renaissance and Modern Sculpture. A general treatment of sculpture from the end of the Middle Ages to modern times. Prerequisite: one of the junior courses in Art and Archaeology. Lecturer, Professor Morey; preceptors, Professors Morey and Smith.

\*402. Greek Sculpture. A study of the technique, forms, composition and history of Greek sculpture. Lectures

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*f*—Free elective.

\* Also listed, with additional work, as a graduate course.

and required reading. Prerequisite course, Ancient Sculpture 301. Lecturer, Professor Elderkin.

\*403 *f.* The Revival of Painting in Italy. An outline of the history of painting in Italy from Cavallini to Michelangelo, with special regard to the Florentine School. Lecturer, Professor Mather; preceptors, Professors Mather and Smith.

\*404 *f.* Modern Painting. The theory and development of Modern Painting will be traced, chiefly in France and England, its precursors in the 17th century, to the year 1900. Artistic movements will be related to their cognate tendencies in literature and politics. Especial attention will be given to the growth of romanticism in painting with its sequels in realism and impressionism. Lecturer, Professor Mather; preceptors, Professors Mather and Smith.

405, 406. Classical Architecture. The detailed study of the architecture of the Greeks and Romans in its historical development in antiquity and the Renaissance. Colonial, Neo-classic, and modern architecture. Open to approved juniors. Prerequisite course Ancient Architecture 303. Lectures and reading. Professor Butler.

†407. Perspective and Indication. The science of drawing in perspective, and its application to architectural presentation by the shortest and most direct methods, including the pictorial treatment of the finished drawing. Prerequisite courses 305, 306. Lectures and drawing periods. Professor Morgan.

408. Applied Elements. The theory of architectural design and the application of Classic architectural principles to the solution of problems in design suitable

*f*—Free elective.

† Does not count as one of the two courses required of departmental students.

to beginners. Prerequisite courses 305, 306 and 307. Lectures and drawing periods. Professor Morgan. 409, 410. Freehand Drawing. The first term is devoted to drawing in charcoal from the cast and from nature with especial attention to architectural subjects, and the second to watercolor work, including sketching out of doors. Open to approved students only. Prerequisite courses 305, 306, 308. Mr. Park.

NOTE.—Drawing courses are not regarded by the Department as prerequisites, except for drawing courses, nor are they counted as departmental courses.

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For graduate courses in Art and Archaeology, see under the Graduate School.

#### SCHOOL OF ARCHITECTURE

The Department of Art and Archaeology has extended its courses in Architecture so that Princeton students desiring to enter the architectural profession, by taking certain courses in mathematics during their freshman and sophomore years, and by beginning as approved sophomores their study of the history of Architecture, and continuing their studies in the Art Department and the Departments of Mathematics and Civil Engineering, can in two years of graduate work at Princeton complete the work covered in the greater architectural schools and qualify for the degree of Master of Fine Arts (M.F.A.). A schedule of the required subjects for this course in Architecture is printed below. The courses, listed therein, which have not already been described among the undergraduate courses. will be found under the Graduate School.

SCHEDULE OF UNDERGRADUATE COURSES FOR THOSE ELECTING  
THE DEPARTMENT OF ART AND ARCHAEOLOGY,  
BUT NOT TAKING THE COMPLETE COURSE  
IN ARCHITECTURE

## SOPHOMORE YEAR

<i>First Term</i>	<i>Second Term</i>
303. Ancient Architecture.	304. Mediaeval Architecture.

## JUNIOR YEAR

301. Ancient Art.	302. Mediaeval Art.
405. Classical Architecture.	406. Renaissance Architecture.

## SENIOR YEAR

401. Renaissance and Modern Sculpture.	402. Greek Sculpture.
403. Italian Painting.	404. Modern Painting.

SCHEDULES OF UNDERGRADUATE AND GRADUATE COURSES  
FOR A COMPLETE COURSE IN ARCHITECTURE

1. For a student enrolled in Princeton University as a candidate for the degree of A.B. on graduation, and the degree of M.F.A. in Architecture after two years of graduate work.

The numbers preceding the titles of courses refer to the descriptions already listed. All undergraduate courses are of three hours per week. Five courses each term for four years are required for a bachelor's degree.

## SOPHOMORE YEAR

<i>First Term</i>	<i>Second Term</i>
303. Ancient Architecture.	304. Mediaeval Architecture.
201b. (C.E.) Descriptive Geometry	308. Architectural Drawing.

Three electives. Three electives.  
(Recommended electives—English, French, and Mathematics)

## JUNIOR YEAR

405. Classical Architecture.	406. Renaissance and Modern
305. Elements of Architecture.	Architecture.
301. Ancient Art.	306. Shades, Shadows and Ren-
Two electives	dering.
	302. Mediaeval Art.
	Two electives.

(Recommended electives—Economics and History)

## SENIOR YEAR

407. Perspective and Indication.	408. Applied Elements.
409. Freehand Drawing (Char-	410. Freehand Drawing (Water-
coal).	color).
403. Italian Painting.	404. Modern Painting
401. Renaissance Sculpture.	402. Greek Sculpture.
One elective.	One elective.

(Recommended electives—Economics and History)

## 1ST GRADUATE YEAR

NOTE.—The figures following the titles of courses in the graduate years indicate the number of hours per week that the student is expected to devote to the course, including lectures, recitations, drawing and study, and will, of course, vary somewhat according to the individual.

501. Elementary Design	24	502. Intermediate Design	24
505. Freehand Drawing	8	506. Freehand Drawing	8
509. Ornament and Decora-		510. Ornament and Decora-	
tion	4	tion	4
515. Building Materials	4	516. Building Materials	4
301. (C.E.) Structural Design	4	302. (C.E.) Structural Design	4
519. Development of Styles	2	520. Development of Styles	2
	—		—
	46		46

## 2ND GRADUATE YEAR

503. Advanced Design	30	504. Advanced Design and Thesis	32
511. Ornament and Decoration	4	512. Design of Ornament	8
513. Mechanical Equipment of Buildings	4	514. Contracts and Specifications	4
507. Freehand Drawing	6	522. Development of Styles	3
521. Development of Styles	3		—
	—		47
	47		

2. For a student enrolled in Princeton University who has not begun the study of architecture in sophomore year, and who wishes to obtain the degree of A.B. on graduation, and the degree of M.F.A. in Architecture after two years' graduate work.

## JUNIOR YEAR

303. Ancient Architecture.	304. Mediaeval Architecture.
305. Elements of Architecture.	306. Shades, Shadows and Rendering.
301. Ancient Art.	
201. (C.E.) Descriptive Geometry.	302. Mediaeval Art.
One elective.	308. Architectural Drawing.
	One elective.

## SENIOR YEAR

405. Classical Architecture.	406. Renaissance and Modern Architecture.
407. Perspective and Indication.	
403. Italian Painting.	408. Applied Elements.
401. Renaissance Sculpture.	404. Modern Painting.
409. Freehand Drawing (Charcoal).	402. Greek Sculpture.
	410. Freehand Drawing (Watercolor).

The two graduate years are the same as in Schedule I.

3. For a student without previous study in architecture, entering the School of Architecture as a candidate for the degree of Master of Fine Arts in Architecture. This sched-

ule requires the strictest application, and the average student will need three years and a half to complete the work, unless he receives credit for several courses at entrance.

1ST GRADUATE YEAR

303. Ancient Architecture	5	304. Mediaeval Architecture	5
301. Ancient Art	5	302. Mediaeval Art	5
305. Elements of Architecture	16	306. Applied Elements	20
407. Perspective and Indication	8	408. Shades, Shadows and Rendering	8
409. Freehand Drawing (Charcoal)	6	410. Freehand Drawing (Watercolor)	8
201b. (C.E.) Descriptive Geometry	6	516. Building Materials	5
515. Building Materials	5		—
	—		51
	51		

2ND GRADUATE YEAR

501. Elementary Design	24	502. Intermediate Design	24
405. Classical Architecture	5	406. Renaissance and Modern Architecture	5
401. Renaissance Sculpture	5	402. Greek Sculpture	5
505. Freehand Drawing	6	506. Freehand Drawing	6
509. Ornament and Decoration	4	510. Ornament and Decoration	4
519. Development of Styles	2	520. Development of Styles	2
301. (C.E.) Structural Design	5	302. (C.E.) Structural Design	5
	—		—
	51		51

## 3RD GRADUATE YEAR

503. Advanced Design	30	504. Advanced Design and Thesis	32
403. Italian Painting	5		
511. Ornament and Decora- tion	4	404. Renaissance and Mod- ern Painting	5
513. Mechanical Equipment of Buildings	4	512. Design of Ornament	8
507. Freehand Drawing	6	514. Contracts and Specifi- cations	4
521. Development of Styles	3	522. Development of Styles	3
	—		—
	52		52

II—DIVISION OF HISTORY AND POLITICS, AND  
ECONOMICS AND SOCIAL INSTITUTIONS

## VI. DEPARTMENT OF HISTORY AND POLITICS

PROFESSORS PAUL VAN DYKE, WESTCOTT, FORD, MC ELROY,  
CORWIN, ABBOTT, MUNRO (CHAIRMAN), BROWN, MYERS,  
SHIPMAN, WERTENBAKER, C. R. HALL, W. P.  
HALL, FRITTS AND MORSE; MR. EDDY, MR. HOWE,  
AND MR. VOORHEES.

101, 102. Introduction to History and Economics. Professors Munro, Kemmerer, and Shipman.

201, 202. Modern History from the eighteenth to the twentieth century. Professor W. P. Hall.

301, 302. History of the United States. Professor McElroy.

303, 304 (R). Mediaeval History. Professor Munro.

305, 306. Constitutional Government; with especial reference to the political institutions of England, France, Switzerland, and the United States. Professor Myers.

307. Constitutional Interpretation. A study of the development of the Constitution of the United States through judicial interpretation. Professor Corwin.

308. Jurisprudence. A study of important legal ideas and institutions from both the analytical and the historical points of view. Professor Fritts.

309. Greek History. Professor Prentice.

310. Roman History. Professor A. C. Johnson.

\*401, 402 (R). Constitutional History of England. The origin and development of English government. This course is particularly important for those who intend to study law. Professor Shipman.

\*403 (R). History of the American Colonies. Professor Wertenbaker.

\*404 (R). American Democracy since the Civil War. A

historical study of progress toward the realization of American national ideals. Prerequisite: History 301, 302. Professor C. R. Hall.

- \*405. Local Government in the United States and other countries, with especial reference to municipal functions in relation to social welfare. Professor Ford.
- \*406. The Party System as an adjunct to National Government. This course includes a special study of socialism. Professor Ford.
- 407. International law. A study of the principles of the law of nations. Professor Brown.
- 408. International law and Diplomacy. A study of the practical application of the principles of international law, with especial reference to questions of American diplomacy. Professor Brown. [Not given, 1920-1921.]
- 409. The Renascence. Professor van Dyke.
- 410. The Reformation. Professor van Dyke.
- 421, 422. Roman Law. Professor Westcott.

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#### REQUIRED COURSE FOR DEPARTMENTAL STUDENTS

Students in the Department of History and Politics shall take, before senior year, one of the following courses: History 101, 102; Economics 201, 202; Economics 301, 302.

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For graduate courses in History and Politics, see under the Graduate School.

#### VII. DEPARTMENT OF ECONOMICS AND SOCIAL INSTITUTIONS

PROFESSORS FETTER (CHAIRMAN), KEMMERER, <sup>†</sup>MC CLELLAN, MC CABE, DIXON, HOWARD, DAVIES, WILLIAMS, AND DR. SLICHTER; MR. HUBBARD, MR. JOHNSON AND MR. TIPPETTS.

- 201. Historical Economics. A study of the main lines of English and American industrial development. Espe-

cial attention to critical periods which best illustrate economic principles.

202. Descriptive Economics. A descriptive study of some important conditions of industry in the present day and more detailed study of some practical problems. Professor McCabe.

301. Elements of Economics. The fundamental principles of economics. Prerequisite to Economics 302, 303 (or may accompany 303), 401, 402, 406, 404, 407, and 408. Mainly recitations, text book and exercises. Thursday, 9 o'clock, must be reserved for occasional lectures and for tests. Section meetings also at other hours. Professors Fetter, Williams and Davies.

302. Economic problems. Continuation of course 301, showing special applications of the principles. The chief practical problems discussed are money in its relation to prices; purpose and operation of banks; insurance; the tariff; principles and practice of taxation; trade unions; labor legislation; immigration; agricultural economics; railroad transportation; control of trusts; socialism. Gives the student not intending to specialize in economics some survey of the general field of economics and is helpful to students intending to elect economics in senior year, but is not a prerequisite. Professors Fetter, Williams and Davies.

303. Elements of Accounting. The theory of debits and credits, the organization of accounting records, and the construction of balance sheets and profit and loss statements. Three meetings a week: one lecture, one recitation, and one (two hour) laboratory period. Economics 301 must precede or accompany this course. Professor Howard.

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\* Also listed as a graduate course.  
† Absent on leave.

304. Principles of Accounting. A continuation of course 303. Special features of corporation accounting; financial and profit and loss statements of corporations; valuation of special assets and liabilities; factors of depreciation, methods of calculating depreciation charges and reserves; the elements of corporate proprietorship; distribution of proprietorship gains; the nature of reserves and funds; the elements of industrial cost accounting; and the elements of income and excess profits tax accounting. Prerequisite courses: Economics 301 and 303. Professor Howard.

306. Statistics. Statistical methods and their application. The methods of collection, presentation, analysis and interpretation of numerical data based on mass phenomena. The aim will be to improve the student's ability to make intelligent use of economic and business data. In so far as possible the treatment will require only elementary mathematical training. Professor Williams.

\*401. Money and Banking. The fundamental principles of money, credit, and banking, and their exemplification in modern currency and banking history, particularly that of the United States. Considerable attention is given to present day conditions and problems. Lectures and weekly conferences. Prerequisite course: Economics 301. Professors Kemmerer and Williams.

\*402. Public Finance. Government expenditures and revenues, public debts and financial administration; taxation; the principles of equity in the distribution of tax burdens and the principles of the shifting and incidence of taxation; the leading types of taxes such as tariff duties, excise taxes, income taxes, inheritance taxes and property taxes. Prerequisite course 301. Professors Kemmerer and Williams.

403. European Economic Policy in the Nineteenth Century. Prerequisite: Economics 301. Professor McClellan. [Not given, 1919-1920.]

\*405. Labor Problems. Labor organizations and labor legislation; history of the labor movement in England and the United States; distribution of the membership in trade unions; the American Federation of Labor; structure of the various types of American unions; union policies; employers' associations; joint trade agreements, their extent and results, with analysis of the conditions required for successful collective bargaining; revolutionary labor organizations. The latter part of the term will be devoted to general topics such as protective legislation, minimum wage laws, compensation for accidents and diseases, unemployment, old age and invalidity insurance, labor disputes, governmental mediation, investigation and arbitration. Prerequisite course: Economics 301. Professor McCabe.

406. Social Economics. A study of some of the influences affecting the welfare of the people, particularly poverty and criminality, and their social, economic and biological sources. Class visits to institutions, involving personal expenses, and special visits and reports are required. Two lectures a week, readings and class meetings. Prerequisite course: Economics 301. Professors Fetter and Davies.

\*407. Corporation Finance. The development, legal characteristics and financial relationships of corporations; corporate securities; capitalization and valuation; promotion and underwriting; receivership and reorganization; problems of corporate management; anti-trust legislation. Prerequisite, Economics 301. Professors Dixon and Howard.

\*408. Economics of Transportation. History and present

status of transportation and communication including rail, water and highway transport and the more important public utilities; theories of rate making; problems of cooperation and combination including intercorporate relationships; public regulation both federal and state; government operation of railways during the European War and the problem of the future, including a consideration of the government ownership as a permanent solution. Prerequisite course: Economics 301. Professors Dixon and Howard.

## III. DIVISION OF MATHEMATICS AND SCIENCE\*

## VIII. DEPARTMENT OF MATHEMATICS

DEAN FINE (CHAIRMAN), PROFESSORS THOMPSON, EISENHART, VEBLEN, GILLESPIE, BOUTROUX, MAC INNES, AND WEDDERBURN; DR. ALEXANDER, AND MR. HAMMOND.

101, 102. Plane Trigonometry, Algebra and Co-ordinate Geometry. Freshman course, open to students who have not offered trigonometry for entrance. Professor Fine.

103, 104. Algebra, Co-ordinate Geometry, Calculus, and Spherical Trigonometry. Required of all C.E. Freshmen. Professor MacInnes.

109. Algebra and Co-ordinate Geometry. Freshman course, open to students who have offered trigonometry for entrance. Professor Gillespie.

110. Calculus. Freshman course, open to students who have taken 109. Professor Gillespie.

201, 202. Calculus. Elective course, open to all sophomores who have not taken 109, 110. Prerequisite to the Departments of Mathematics and Physics. Professor Fine. (Not a prerequisite after 1919-1920.)

203. Calculus and Elementary Differential Equations. Required of all C.E. sophomores. Professor MacInnes. (Not given 1919-1920.)

205, 206. Analytical Mechanics. Required of all C.E. sophomores. Professor MacInnes.

207. Calculus. Continuation of 110. Open to all sophomores who have taken 109, 110. Professors Thompson and Veblen.

208. Differential equations. Open to all students who have

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\* Courses in Psychology form a part of Division III.

completed 202 or 207. Professors Thompson and Veblen.

209, 210. Algebra. A year's course based on Fine's *College Algebra*. Open to all students who have completed 101, 102 or 109, 110. Professor Fine. (Given in 1920-1921.)

211. Solid Analytical Geometry. Open to all students who have completed 101, 102 or 109, 110. Professor Eisenhart. (Given in 1920-1921.)

212. Homogeneous Co-ordinates. Conic sections and modern analytical geometry. Open to all students who have completed 211. Professor Eisenhart. (Given in 1920-1921.)

301, 302. Algebra. Junior course, open to seniors. Professor Fine. (Not given in 1920-1921.)

303, 304. Projective Geometry. Synthetic geometry of conic sections. Non-Euclidean geometry. Foundations of Euclidean geometry. Junior course, open to seniors. Professor Veblen. (Given in 1920-1921.)

305, 306. Co-ordinate Geometry. Second course. Junior course, open to seniors. Professor Thompson. (Not given in 1920-1921.)

307, 308. Analysis. Review of fundamental theorems of calculus, power series, implicit functions, multiple integrals, definite integrals, the Gamma function. Fourier's series, elliptic integrals. Open to students who have completed 202 or 207. Professor Boutroux.

309, 310. Analytical Mechanics. Introductory course. Junior course, open to seniors who have completed 202 or 207. Professor Gillespie.

311, 312. Ballistics. Junior course, open to seniors. Professor Veblen. (Not given in 1920-1921.)

\*401, 402. Functions of a complex variable. Introductory course. Professor Fine.

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\* Also listed as a graduate course.

For graduate courses in Mathematics, see under the Graduate School.

### IX. DEPARTMENT OF PHYSICS

DEAN MAGIE (CHAIRMAN), PROFESSOR LOOMIS, DEAN MCCLENAHAN, PROFESSORS TROWBRIDGE, ADAMS, P. E. ROBINSON, COOKE, NORTHRUP AND COMPTON, MR. ROBERTS AND MR. STEVENS

101, 102. General Physics. General course in physics, including laboratory work. For freshmen who have not passed Physics for entrance. Both terms, 4 hours a week. For this course a fee of \$5 is charged and a deposit on apparatus of \$5 is required. Professor McClenahan.

103, 104. General Physics. Advanced freshman course, for all freshmen who passed Physics for entrance with a satisfactory school record in laboratory work. Professor Trowbridge.

201, 202. General Physics. General course in physics, including laboratory work. Sophomore course, for sophomores who did not take the corresponding course in freshman year (Physics 101, 102.) Both terms, 4 hours a week. For this course a fee of \$5 is charged, and a deposit on apparatus of \$5 is required. Professor McClenahan.

203, 204. Wave Motion, Sound and Light. Sophomore course open to students who have taken either Physics 101, 102, or Physics 103, 104 in freshman year. Professor W. F. Magie.

205, 206. Heat, and Electricity and Magnetism. Required of all C.E. sophomores. Professor Loomis.

301, 302. Experimental Physics. Lectures and laboratory work. Professor Loomis.

303. Properties of Matter. Professor Compton.

304. Heat. Professor W. F. Magie.

309, 310. (Mathematics 309, 310.) Analytical Mechanics. Introductory course. Professor Eisenhart.

401, 402. Advanced Experimental Physics. Professor Cooke.

403, 404. Theoretical Physics: Electricity and Magnetism. Prerequisite course: The Elements of the Calculus. Professor Cooke.

### HONORS COURSES IN PHYSICS

The Department of Physics offers, in conjunction with the Department of Mathematics, the following courses, from which are to be chosen the courses taken by candidates for Special Honors in Physics:

309, 310 c. Analytical Mechanics. Professor Eisenhart.

311, 312 d. Physical Optics. Professor P. E. Robinson.

313, 314 e. Experimental Physics. Experiments in mechanics, properties of matter, sound, heat, and light. Professor P. E. Robinson.

\*411, 412 c. Theory of Electricity and Magnetism. Professor Adams.

\*413, 414 d. Theoretical Physics.

- a.* Thermodynamics.
- b.* The Electron Theory. Professors W. F. Magie and Compton.

\*415, 416 e. Experimental Physics. Experiments in electricity and magnetism. Professor Cooke.

### HONORS COURSES IN MATHEMATICS AND PHYSICS

The Departments of Mathematics, Physics and Astronomy offer in conjunction the following courses from which are to be chosen the courses taken by candidates for Special Honors in Mathematics and Physics.

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\* Also listed as a graduate course.

*Junior Year*

- A. Geometry 305, 306.
- B. Analysis 307, 308.
- C. Applied Mathematics (Mechanics) 309, 310
- D. Physical Optics 311, 312
- E. Experimental Physics 313, 314

A candidate for Honors in Mathematics and Physics selects three of these courses, of which one must be the course C, unless a different choice is permitted by the Departments.

*Senior Year*

- a. Differential Geometry 403, 404.
- b. Analysis 409, 410.
- c. Applied Mathematics (Electricity and Magnetism) 411, 412
- d. (a) Thermodynamics, (b) The Electron Theory, 413, 414
- e. Experimental Physics 415, 416
- f. Celestial Mechanics (Astronomy) 401, 402

A candidate for Honors in Mathematics and Physics takes three courses selected from those of the courses a, b, c, d, e, f, for which he is prepared by his previous courses, or from those of the courses A, B, C, D, E, which have not been taken.

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For graduate courses in Physics, see under the Graduate School.

**X. DEPARTMENT OF ASTRONOMY**

PROFESSORS RUSSELL AND DUGAN

301. Introduction to Astronomy. The Solar System. Lectures. Professor Russell.

302. Stellar Astronomy. A review of present knowledge and research. Lectures. Professor Russell.

\*401, 402 *f*. Honors Course in Celestial Mechanics. An elementary knowledge of the calculus and of differential equations is prerequisite. Professor Russell.

403, 404. Practical Astronomy. The principal instruments and methods of observation. Lectures and observatory work. Professor Dugan.

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For graduate courses in Astronomy, see under the Graduate School.

## XI. DEPARTMENT OF CHEMISTRY

PROFESSORS MCCAY (CHAIRMAN), NEHER, HULETT, FOSTER, MENZIES, SMITH, VAN NEST, TAYLOR, FURMAN, AND FLEECE; MR. RICHARDSON, MR. BURNS, MR. NEVILLE, MR. BEISLER, MR. JONES, MR. MEIGHAN, MR. NELSON, AND MR. EDDY.

[NOTE: No student will be allowed to take simultaneously more than two courses involving laboratory work.]

101, 102. Beginners' General Chemistry. Experimental lectures on the elements and their compounds, supplemented by laboratory work. Three lectures or recitations, and one laboratory exercise of 3 hours each week. The laboratory work is in part introductory to qualitative analysis. Freshman course, elective for B.S., alternative to Physics 101, 102. Both terms, 4 hours a week. Professors Foster and Fleece, assisted by Mr. Richardson, Mr. Burns, Mr. Neville, Mr. Beisler, Mr. Jones, Mr. Meighan, and Mr. Eddy.

103, 104. General Chemistry. Advanced course for freshmen. Experimental lectures and recitations on

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\* Also listed as a graduate course.

the elements and their compounds and on the fundamental laws and theories of Chemistry, supplemented by laboratory work. Three lectures or recitations and one laboratory exercise of 3 hours each week. The laboratory work is in part introductory to qualitative analysis. Freshman course, elective for B.S., alternative to Physics 101, 102. Both terms, 4 hours a week. This course is open, subject to the approval of the instructor in charge, to those students who have passed in Chemistry for admission, and is required of those electing General Inorganic Chemistry, who have passed Chemistry for admission with a grade of 75 per cent or over. Professor Foster, and assistants.

†201, 202. Beginners' General Chemistry. Experimental lectures on the elements and their compounds, supplemented by laboratory work. Three lectures or recitations, and one laboratory exercise of 3 hours each week. The laboratory work is in part introductory to qualitative analysis. Sophomore elective, both terms, 4 hours a week. Professors Foster and Fleece, assisted by Mr. Richardson, Mr. Burns, Mr. Neville, Mr. Beisler, Mr. Jones, Mr. Meighan, and Mr. Eddy.

203, (301). Qualitative Analysis. (Restricted to students who intend to take Quantitative Analysis). The course involves about 9 hours of laboratory work, besides a classroom exercise, each week. Sophomore and junior course, first term, and the first four weeks of second term, 4 hours a week. Prerequisite course: General Chemistry. Required in the Department of Chemistry. Professor Smith, assisted by Mr. Eddy.

204, (302). Qualitative Analysis (continued). Quantitative Analysis, Part I. Qualitative Analysis for first

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† Courses 101, 102 or 103, 104 or 202 are prerequisite to all later courses in Chemistry and Mineralogy and to the Department of Chemistry, Biology, and Geology.

four weeks of term. See 203. Professor Smith. Quantitative Analysis for balance of term. The theory and practice of typical gravimetric and volumetric analyses, chiefly the analyses of simple salts. The course involves about 9 hours of laboratory work in addition to one or more class exercises, each week. Junior course, second term, 4 hours a week. Prerequisite courses: General Inorganic Chemistry and Qualitative Analysis. Prerequisite to the latter courses in Quantitative Analysis. Required in the Department of Chemistry. Professors McCay and Furman.

301. Qualitative Analysis. For description, see 203.
302. Qualitative Analysis (continued). Quantitative Analysis, Part I. For description, see 204.
303. Organic Chemistry, Part I. Introductory course devoted mainly to the study of the simpler saturated and unsaturated open chain hydrocarbons, alcohols, aldehydes, ketones, and acids, together with their more important immediate derivatives and homologues. Lectures, recitations, and laboratory work. Junior or senior course, first term, 4 hours a week. Required in the Department of Chemistry. Professor Neher, assisted by Mr. Richardson and Mr. Beisler.
304. Organic Chemistry, Part II. Continuation of Part I, including aliphatic compounds of multiple and mixed function, especially the hydroxy-acids and the dibasic acids with their derivatives, and an introduction to stereochemistry; the carbohydrates and the uric acid group in outline; the simpler cyclic compounds, benzene and its derivatives, aromatic nitrogen compounds, phenols, quinones, dyes, etc. Lectures, recitations, and laboratory work. Junior or senior course, second term, 4 hours a week. Required in the Department of

Chemistry. Professor Neher, assisted by Mr. Richardson and Mr. Beisler.

305. Physical Chemistry, Part I. Two lectures and two laboratory periods. Molecular theory and molecular weight determinations by standard methods. Junior and senior course, first term, 4 hours a week. Required in the Department of Chemistry. Professor Taylor, assisted by Mr. Nelson.
306. Physical Chemistry, Part II. Two lectures and two laboratory periods. Theory of solutions, solubilities, determination of solubilities, conductivity, etc. Junior and senior course, second term 4 hours a week. Required in the Department of Chemistry. Professor Taylor, assisted by Mr. Nelson.
307. Quantitative Analysis, Part II. Continuation of Part I, including salts, minerals, and alloys. This course involves about 9 hours of laboratory work, in addition to one or more class exercises each week. Junior and senior course, first term. Prerequisite courses: General Inorganic Chemistry, Qualitative Analysis, Quantitative Analysis I. Prerequisite to Quantitative Analysis III. Required in the Department of Chemistry. Professors McCay and Furman.
308. Quantitative Analysis, Part III. Systematic volumetric analysis. This course involves about 9 hours of laboratory work, in addition to one or more class exercises, each week. Junior and senior course, second term. Prerequisite courses: General Inorganic Chemistry. Qualitative Analysis, Quantitative Analysis I and II. Professors McCay and Furman.
309. Rise and Development of Chemical Theories, Part I. Chiefly inorganic. A history of the most important chemical theories from the period of the doctrine of phlogiston down to recent times. Especial attention is

given to the facts and laws which led to the establishment on a firm basis of the Atomic-molecular theory, to the resulting consistent system of atomic weights, and to the natural classification of the elements which followed the adoption of the system. Chemical equilibrium and the law of mass action are also discussed and the theory of solutions as propounded by Van't Hoff and Arrhenius. Lectures and written recitations.

Prerequisite: General Chemistry. Professor McCay.

310. Rise and Development of Chemical Theories, Part II. Continuation of Part I, with especial reference to valence, the problems of isomerism and theories of structure and configuration, particularly as applied to carbon compounds. Lectures and written recitations. Prerequisite: General Inorganic Chemistry. Professor Neher.

311. Organic Chemistry. Brief general course. Lectures, recitations, and laboratory work. Junior course, first term, 4 hours a week. Required in the Department of Biology and *not open to students in other Departments*. This course may be taken by B.S. sophomores who have taken Chemistry 101, 102 and intend to enter the Department of Biology, but only on recommendation of the Department of Biology. Mr. Richardson.

[NOTE: The biological and pre-medical requirements in Chemistry may be met by taking 311 and Qualitative Analysis 312, and Biological Chemistry, or Organic Chemistry Parts I and II (303, 304).]

312. Qualitative Analysis. Junior course, second term, two class exercises and two laboratory periods of three hours each per week, 4 hours. Prerequisite, General Inorganic Chemistry. Required in the Department of Biology. The course is also open, subject to the ap-

proval of the instructor in charge, to seniors and sophomores who have satisfactorily met the prerequisite requirements. Professor Van Nest, assisted by Mr. Eddy.

401, 402 (307, 308). Quantitative Analysis, Parts II and III. For description, see 307, 308.

\*403. Quantitative Analysis, Part IV. Complicated substances, special methods, etc. This course involves about 9 hours of laboratory work, in addition to one or more class exercises, each week. Prerequisite courses: General Inorganic Chemistry, Qualitative Analysis, Quantitative Analysis, Parts I, II and III. Professors McCay and Furman.

\*404. Metallography. The metals and their alloys; structure, constitution and properties; methods of investigation. Lectures and laboratory work. Professor D. P. Smith.

\*405. Organic Chemistry, Part III. Devoted to a more detailed study of special subjects and theories; malonic ester and acetoacetic ester; carbohydrates; amino-acids and polypeptides; urea, ureides, and purines; benzene theory; dyes and color theory, etc. Lectures, recitations and laboratory work. Prerequisites: Parts I and II or equivalents. Professor Neher.

\*406. Organic Chemistry, Part IV. Subjects treated will be announced. Prerequisites: Part I and II or equivalents.

\*407. Physical Chemistry Part III. One lecture and two laboratory periods. Electrochemistry and Thermochemistry. Professor Hulett.

\*408. Physical Chemistry Part IV. Two lectures and one laboratory period. Equilibrium and velocity of reactions. Professor Hulett.

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\* Also listed as a graduate course.

\*409, \*410. Advanced Inorganic Chemistry. Crystal form and habit, isomorphism, X-rays and crystal structure, salt hydrates and their equilibrium conditions, double salts, solidification of molten masses, aluminothermy, colloids, inorganic isomerism, the metalammines, per-compounds, ammono-compounds, the minor elements, and other topics will receive introductory treatment. This course must be preceded by course 302. Professor Menzies.

\*411, \*412. Principles of Industrial Chemistry. Lectures and reading. First term: Fundamental chemical industries, including fuels, acids, alkalies and salts will be considered from the energy, engineering and economic standpoint. Professor Taylor. Second term: The electrochemical and electrothermic industries will be considered from the theoretical, engineering and economic standpoints. Professor Hulett.

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For graduate courses in Chemistry, see under the Graduate School.

## XII. DEPARTMENT OF BIOLOGY

PROFESSORS SCOTT, RANKIN, MC CLURE, CONKLIN (CHAIRMAN), DAHLGREN, SHULL, FARR, HARVEY, AND CARY ;  
DR. PATON, DR. MAYOR ; MR. SILVESTER.

201, 202. General Biology. Lectures, laboratory work, and recitations. An introduction to the fundamental properties of living things, their functions, structures, classification, habits, life-histories, and evolution. Freshman elective for students who have had chemistry in preparatory school ; sophomore elective for students in all courses who have had General Chemistry 103,

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\* Also listed as a graduate course.

104, or its equivalent. Prerequisite to all the subsequent courses in Biology, except Botany 303, 304. Professors Conklin and Cary.

301, 302. Botany. Practical work in the field and laboratory, lectures and recitations. An introduction to the general principles of plant life. Professor Rankin.

303. Comparative Osteology. Ontogeny and comparative structure of the skeletons of the different classes of vertebrates. Exercises in descriptive work. Each student must prepare a thesis on a skeleton especially assigned for his study. Professor Farr.

304. Bacteriology. Lectures on the classification, morphology, life processes and etiological relations of Bacteria; laboratory work on selected types of air, soil, water and parasitic forms. Professor Dahlgren.

305. Invertebrate Zoology. Lectures and laboratory work on selected phyla of invertebrates. Professor Cary.

306. Parasitology. A study of the structures, relationships and life-histories of animal parasites and their rôle in the causation and transmission of diseases of man and the higher animals. Lectures, recitations and laboratory work.

\*401. Comparative Anatomy of Vertebrates. Lecture and laboratory course. Lectures on the comparative anatomy of the organ systems of vertebrates, and dissection of the dog-fish and a mammal. Professor McClure.

\*402. Vertebrate Embryology. Lecture and laboratory course. A comparative study of the development of vertebrates. Professor McClure.

\*403. Histology. A study of protoplasm, cells, and tissues as they underlie animal and vegetable life; the histology of the fundamental tissues of support, energy

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\* Also listed as a graduate course.

production, sensation and conduction. Professor Dahlgren.

\*404. Advanced Histology. The comparative histology of the tissues of reproduction, assimilation, circulation, excretion and secretion. Practice in microscopical technic. Thesis. Continuation of Histology 403. Professor Dahlgren.

\*406. Vertebrate Palaeontology. Lectures and laboratory work on fossil vertebrates. Professor Scott.

\*407. 408. General Physiology. Lectures and laboratory work. An introduction in the phenomena exhibited by living matter. Professor Harvey.

\*409, 410. Genetics. Lectures, recitations, and laboratory work. Variation and heredity in plants and animals, and the application of the principles of genetics to the improvement of plants, animals, and man. Laboratory work will consist largely of actual research on simple problems. A thesis will be expected of each student. Professor Shull.

\*412. Biological Chemistry. A study of carbohydrates, fats, proteins, enzymes, vitamines, hormones, immune bodies and other compounds manufactured by plants and animals. Biochemical processes as well as biochemical compounds will be studied. Professor Harvey.

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For graduate courses in Biology, see under the Graduate School.

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\* Also listed as a graduate course.

## XIII. DEPARTMENT OF GEOLOGY

PROFESSORS SCOTT (CHAIRMAN), PHILLIPS, SMYTH, FARR,  
VAN INGEN, SINCLAIR; MR. HOWELL.

201, 202. Geology. Beginners' course, covering the subject in outline. First term, Physical Geology; Second term, Geological History of the Earth. Prerequisite to courses 301, 403, 405, 409. Lecturer, Professor Scott; preceptors, Professors Farr, Sinclair, and Mr. Howell.

203. Geology. The composition and structures of rocks and mineral deposits; geological processes as related to engineering operations; geological mapping. Lectures, laboratory and field work. Required course for C.E. sophomores. Professor Buddington.

301, 302. Structural Geology. The rocks and structures of the Earth's crust; and the elements of Geological Surveying. Essentially a laboratory and field course. Field work required. Three laboratory periods of 2 hours each, or equivalent. Prerequisite: Geology 201, 202. Prerequisite to courses 403, 404, and 405, 406. Professor Sinclair.

303, 304. Mineralogy. First term, Descriptive Mineralogy. Second term, Determinative Mineralogy, including Blowpipe Analysis. Lectures, recitations and laboratory work. Prerequisite to courses 403, 404; 407, 408. Professor Phillips.

305, 306. Evolution of Organisms and Man. The principles of Evolution and the historical development of the various types of Life upon the Earth. Open elective. Lectures and conferences. Professors Scott, Sinclair, Farr, van Ingen, and Mr. Howell.

\*401, 402. Introduction to Palaeontology. The principles of Palaeontology, and study of the important groups of animals and plants in their geological relations.

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\* Also listed as a graduate course.

Open elective. Lectures and conferences. Professors Scott, van Ingen, Sinclair; Preceptors, Professors van Ingen, Sinclair, and Farr, and Mr. Howell.

\*403, 404. Petrology. A study of the composition and structural features of the rocks of the Earth. Lectures, laboratory, and field work. Prerequisites: 301, 302, Mineralogy 303, 304. Professor Smyth.

\*405, 406. Practical Geology. Designed to instruct in exact methods of securing information upon which the body of geological science is based. Lectures, 2 weeks field work, laboratory, and library work, culminating in a written report. Prerequisites: Geology 201, 202; 301, 302.

\*407, 408. Optical Mineralogy and Petrography. Lectures and laboratory work on Crystallography and on the Optical Properties of rock-forming minerals, with instruction in the general practice of Petrography. Prerequisite, Mineralogy 303, 304. Professor Phillips.

\*409, 410. Economic Geology. The principles controlling the circulation of mineral matter in the earth's crust, its concentration into workable deposits, and the geological relations of typical mining regions. Lectures and laboratory work. Open only to students taking Geology 403, 404. Professor Smyth.

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For Graduate courses in Geology, see under the Graduate School.

#### SUMMER COURSE IN FIELD GEOLOGY

Sophomores and juniors who contemplate electing the major part of their studies in the Department of Geology, or who are interested in field work, are advised to consult the professors of the Department with a view to joining one of the field parties during a portion or all of the summer

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\* Also listed as a graduate course.

vacation. Such field work, satisfactorily performed and reported upon, may be presented for credit toward a degree.

Graduate students are advised to join a field party during the summer previous to their first year of residence. For more definite information address, Secretary of Department of Geology, P. O. Box 248, Princeton, New Jersey.

#### XIV. DEPARTMENT OF PSYCHOLOGY

PROFESSORS WARREN (CHAIRMAN), AND MC COMAS, MR. ENO,  
DR. COTTON, MR. FRY, AND MR. PRINCE.

305. General Psychology. Outline of the science of psychology. Functions of brain and nervous system. Laws of human behavior and consciousness; their application to everyday life. Lectures, demonstrations, preceptorial conferences, and written analyses. Lecturer, Professor Warren; Preceptors, Professors Warren and McComas.
306. Genetic Psychology. Evolution of behavior and consciousness in the lower species and man. Lectures, theses, and preceptorial conferences. Lecturer, Professor Warren; Preceptors, Professors Warren, Johnson, McComas.
403. Experimental Psychology. Introductory course. Psychophysical methods, analysis of sensation, reaction, and study of the common senses. Lectures and work in the Laboratory. General Psychology 305 is recommended to be taken as preparatory to this course. Professor Warren, assisted by Mr. Prince.
404. Experimental Psychology. Continuation of 403. Special senses; space perception and illusions; higher intellectual processes. Lectures and work in the laboratory. Professor McComas, assisted by Mr. Prince.
401. The History and Psychology of Education. This course is designed to meet the needs of students intending to

teach. It presents the historical development of the educational principles and institutions which influence the present, and the applications of experimental psychology to the problems of teaching. Lectures and preceptorial work. Professor McComas.

#### XV. DEPARTMENT OF HYGIENE AND PHYSICAL EDUCATION

PROFESSORS RAYCROFT (CHAIRMAN), LUEHRING, TOOKER, AND SINCLAIR; MR. SULLIVAN, AND MR. NIES.

The aim of the work in this Department, more fully described in Part VI of this Catalogue, is to promote the general health and physical efficiency of the students; and to stimulate the formation of habits of rational exercises and healthy living that will be continued after graduation. All members of the freshman class are required to take regular work as indicated below.

Personal Hygiene. Lectures and recitations. A discussion of the fundamentals of health and physical efficiency; the influence of diet, exercise, bathing and sleep; the effects of personal habits; the use of alcohol and tobacco; and a study of the more common infectious diseases—their nature, causes, methods of transmission and prevention. The lectures will be illustrated by the use of manikins, diagrams, and lantern slides. Freshman course, first term, 2 hours a week. Professors Raycroft, Luehring, Tooker and Sinclair.

Physical Examinations. Each student is given a careful physical examination which serves as a basis for advice to special corrective exercises, if needed, and affords an opportunity for a discussion with each individual on the various practices and habits that affect his physical and mental efficiency. This examination includes a few anatomical observations; strength tests

for determining muscular efficiency; and an examination of the eyes, nose, ears, throat, and the vital organs. Professors Raycroft, Luehring, Tooker, Sinclair and Mr. Nies.

**General Physical Training.** Required of all freshmen, both terms, 3 hours a week. Professors Luehring and Tooker, Mr. Sullivan, and Mr. Nies.

- A. **Formal Work.** This course is designed to give every student a well organized program of work to improve posture and to develop body control and alertness; elementary instruction in boxing, wrestling, and other personal contact games; group games and mass athletics, including forms of exercise that will be useful during the college course and after graduation. The work is conducted out of doors whenever possible. Entering students are required to take this course during one season of the freshman year.
- B. **Elementary Swimming and Life Saving.** Every student is required to pass a test in swimming and life saving immediately after his physical examination at the beginning of the year. Those who fail will be required to take elementary instruction in swimming until they are able to pass the freshman tests.
- C. **Highly Organized Games and Contests.** Coaching and instruction are provided for classes and squads in highly organized games and contests, including boxing, wrestling, handball, volley ball, swimming, water polo, tennis, rowing, in addition to the usual intercollegiate events.

**Intramural Athletics for All Students.** Provision is made for the organization and instruction of intramural teams in basketball, swimming, water polo, wrestling, boxing, baseball, soccer, handball, rowing, tennis, etc. Schedules are organized, officials and equipment pro-

vided, to enable teams to contest for the championship of the clubs, classes, and University, in the various branches of sport. Professors Tooker, Luehring, Mr. Nies, Mr. Sullivan, and Mr. Miller.

**Special Course.** In teaching and administration, to qualify men as instructors or coaches in Competitive Games, Mass Athletics, Swimming and Life Saving, Mass Drill, and other forms of physical education. Elective course. Professors Raycroft, Luehring, and Tooker; Mr. Sullivan and Mr. Nies.

## DEPARTMENT OF CIVIL ENGINEERING

**PROFESSORS CONSTANT (CHAIRMAN), WILLSON, SMITH, HARRIS AND BEGGS; MR. MAC MILLAN AND MR. CULVER.**

## FRESHMAN YEAR.

**English 101, 102a.** Literature and Composition. The aim of the course is to develop and train intelligent appreciation of the fundamental qualities of good literature and composition, such as imagination, clarity of thought, structure, and effective expression. This aim is accomplished by the reading and analysis of certain masterpieces of prose and verse from the later nineteenth century writers, English and American, and by the writing of frequent themes which shall express, under the stimulus of these masterpieces, the student's personal thought and observation.

**Physics 101, 102.** General Physics. General course for beginners, including lectures, recitations, and laboratory work. Both terms, 4 hours a week. For this course a fee of \$5 is charged, and a deposit on apparatus of \$5 is required. Professor McClenahan and others.

**Physics 103, 104.** General Physics. Advanced freshman course, for all freshmen who passed Physics for entrance with a satisfactory school record in laboratory work. Professor Trowbridge.

**Chemistry 101, 102.** Advanced general inorganic chemistry and qualitative analysis. Experimental lectures, supplemented by laboratory work. Three lectures or recitations and one laboratory exercise of three hours each week. Both terms, 4 hours a week. Required of C.E. freshmen who present chemistry for entrance. C.E. freshmen not prepared for this course are required to take Chemistry 103, 104, and will complete their chemistry requirement by taking Chemistry 102 in

the second term of their sophomore year. Professor van Nest and others.

Chemistry 103, 104. General Inorganic Chemistry for beginners. Experimental lectures on the elements and their compounds, supplemented by laboratory work. Two lectures, one recitation, and one laboratory exercise of 3 hours each week. Both terms, 4 hours a week. Professor Foster and others.

Mathematics 103, 104. Selected topics of Algebra, Spherical Trigonometry, Coordinate Geometry and Differential Calculus. Professor MacInnes.

Engineering Drawing 101, 102. Use of instruments, lettering, line work, geometric constructions; orthographic, isometric and oblique projections; freehand dimensional sketching; assembly and working drawings; structural drawing of bridge trusses and plate girders. First term, 3 hours a week. Second term, 3 hours a week for the first half of the term. Mr. McMillan.

Surveying 102. Land surveying, leveling, elements of topography, lectures, recitations, calculations and office work. Second term,  $2\frac{1}{2}$  hours a week. Professor Harris and Mr. MacMillan.

Surveying. Summer Field Practice. Land surveying, measurements of lines and angles, farm-surveys. Calculations and mapping, leveling, profile leveling and check leveling. Topography, hand-level contouring. Office work. Three weeks, 8 hours a day, immediately after Commencement. Professor Harris, Mr. MacMillan and others.

#### SOPHOMORE YEAR

Physics 205, 206. Heat, and Electricity and Magnetism. Lectures based on experimental demonstrations. Prerequisite: collegiate course in General Physics. Professor Loomis.

Chemistry. See Freshman Year, Chemistry 102.

Mathematics 203. Integral Calculus and Elementary Differential Equations. Professor MacInnes.

Mathematics 205, 206. Mechanics; analytical and graphical methods applied to equilibrium problems, stresses in frames, centers of gravity, moments of inertia. Kinetics of a particle and rigid body, energy and work, friction, impact. First term, 3 hours a week. Second term, 6 hours a week. Prerequisite: Calculus. Professor MacInnes.

Geology 203. The composition and structures of rocks and Mineral deposits; geological processes as related to engineering operations; geological mapping. Lectures, laboratory and field work. Professor Buddington.

Surveying 201. Structure, use and adjustment of Engineers' field instruments; triangulation, leveling, topographical surveying. Stadia measurements. Lectures, recitations and office work. Professor Harris and Mr. MacMillan.

Surveying and Railway Engineering 202. Preliminary survey and location. Railway curves. Lectures, recitations, problems and calculations. Field practice in contouring, triangulation and stadia surveys. Two afternoons and one office period each week during the last half of the term. Professor Harris and Mr. Macmillan.

Descriptive Geometry 201, 202. Fundamental problems of the point, line, and plane; elementary and higher surfaces; intersections, developments and model-making. Applications in engineering constructions. Both terms, 2 credits of 3 hours each week. Professor Willson.

#### JUNIOR YEAR

Mechanics of Materials 301. This course is intended to meet the requirements of students in all engineering courses

and to prepare them, by the study of the action and effect of forces on materials, to design intelligently and economically the parts entering into any structure or machine. The course comprises a study of the strength and elastic properties of materials; simple and combined stresses; general theory of beams, including simple, cantilever, overhanging, restrained, continuous, constant strength, and compound beams, as regards both their strength and flexure; theory and design of columns according to secant, Euler's, Rankine's, and straight line formulas, and comparison of results with laboratory tests; resilience of columns, beams, shafts, and springs; impact stresses; fatigue of materials; design of shafting for power transmission; design of riveted joints; stresses in cylinders and pipes; review of moments of inertia, principle axes, etc. The solution of numerous problems from engineering practice by the individual students is required. First term, 3 recitation hours and 1 three-hour problem period a week. Professor Beggs. Prerequisites: calculus and mechanics.

**Hydraulics 302.** Elements of hydraulics, including water wheels. Laboratory measurements of the flow of water. Professor Smith.

**Materials Laboratory 303.** Testing of materials of construction in tension, compression, torsion and flexure. Cement and concrete testing. Reading and recitations on processes of manufacture. First term, 2 hours a week. Professor Smith and others.

**Hydraulic Laboratory 304.** Measurements of the flow of water. Second term, 1 hour a week. Professor Smith.

**Kinematics 305.** Graphical determination and diagrams of displacement, velocity and acceleration of the elements of mechanisms; parallel and straight line motion of mechanisms; design and layout of cams, gears and

gearing. Prerequisites: engineering drawing, mechanics, analytical geometry. First term, 2 hours a week. Mr. Culver.

Machine Design 306. Analysis of stresses and strains in machine parts; proportions of machine parts as dictated by stress; design of machine elements, including: fastenings, springs, belting, gears and gearing, fly-wheels, couplings, clutches, brakes, shafting, and bearings. Prerequisites: mechanics of materials. Mr. Culver.

Electrical Engineering 307, 308. Applied Electricity. Methods of generation, transmission and utilization of electrical energy. Principal characteristics of direct and alternating current apparatus with regard to selection, installation, testing and operation of electrical machinery. Both terms, 3 hours a week, with laboratory work. Professor MacLaren.

Thermodynamics 309. General relation of heat energy and power considered analytically and graphically; laws of gases, gas energy cycles; vapors, steam and steam tables, vapor cycles; power, efficiency and performance; action of steam in theoretical and real engines. Prerequisites: physics, mechanics, integral calculus. Mr. Culver.

Heat Power Engineering 310. Types of steam engines; governors, valves, valve gears, and valve diagrams; indicators and indicator diagrams; nozzles, turbines; fuels, combustion, furnaces, stokers, oil burners, boilers, chimneys, auxiliaries; utilization of waste heat, heat transfer, condensers, power plants. Laboratory work includes: calorimetry, use of indicators, valve setting, and tests of steam and gas engines, boilers, pumps and injectors. Prerequisites: Thermodynamics 309. Mr. Culver.

Railway Engineering 311. Railway location and construc-

tion, track problems, structures, earth work, cost computations. Professor Harris and Mr. MacMillan.

Railway Engineering. Summer Field Practice. Railway survey. Complete location of a railroad, staking out for construction, calculation of quantities for estimate of cost. Office work and mapping. Three weeks of 8 hours a day, immediately after Commencement. Professor Harris and Mr. MacMillan.

Structures 312. Introduction to the theory and design of statically determinate beams and trusses. The principles of analytical and applied mechanics are illustrated in the calculation of stresses and design of building frames, roof trusses, and bridges. Stresses are determined both by algebraic and by graphical methods, the latter including the Maxwell diagram, funicular polygon, and influence line. The value of the use of the influence line and equivalent loads as an aid to the derivation of algebraic formulas or to the direct calculation of stresses is emphasized. The types of bridge trusses discussed include the Pratt, Howe, Warren, and cantilever trusses, skew bridges, bridges on curved track, and three hinged arch. The theory is supplemented by many practical problems, including the complete designs of a roof truss and of a railroad plate-girder bridge. Second term, 2 recitation hours and 1 drawing room period per week. Professor Beggs. Prerequisite: Mechanics of Materials 301.

#### SENIOR YEAR

Economics 301. Economic Principles. A fundamental course on the treating of value, trade, price, competition, monopoly, rent, wages, interest, profits, and some of the larger questions of population, natural resources, accumulation of capital, wealth and welfare. The

readings, discussions, and written exercises of various kinds are designed to train the students to an exact understanding of economic concepts and clear thinking on elementary economic problems. Professor Fetter and others.

Economics 302. Economic Problems. A broad treatment of the chief practical economic problems that are attracting public attention, such as the quantity of money, prices, changes in price, the banking system, relations between labor and capital, railroad legislation, government ownership, control of monopoly, and socialism. Professor Fetter and others.

English 401, 402. Theme writing and public speaking. Technical reference reading, written and oral presentation of reports upon engineering projects, argumentation, oral discussion of current topics. Both terms, 2 hours a week.

Bridge Design 403. Continuation of Structures 312. A more advanced study in the theory and design of framed structures. The drawing room work includes the making of a complete stress sheet for a railroad bridge of span 200 feet or more and shop drawings of typical members. Careful study is made of standard specifications and drawings. The student is made familiar with shop practice by occasional visits with instructor to steel fabrication plants and by examination of existing structures. In the latter part of the term is given an introduction to the course in Higher Structures, including the development of Castigliano's equations of work, the equations of deflection and rotation, Maxwell's reciprocal theorem, Williot diagrams, and preliminary applications of these equations and methods to practical problems in stresses and erection. First term, 2 recitation hours and 2 drawing

room periods per week. Professor Beggs. Prerequisite: Structures 312.

Higher Structures 404. Advanced study of the application of the equations of work, deflection and rotation to the problems that arise in the design and erection of draw bridges, arches, continuous beams and trusses, and cantilever bridges. The suspension bridge is treated briefly. The fundamental equations are also applied to the calculation of stresses in indeterminate building frames, secondary stresses, etc., and are fully illustrated by problems arising in the design of concrete and steel structures where continuity exists. Analytical, graphical and mechanical aids to the solution of problems are advantageously employed. Second term, 2 recitation hours and 2 drawing room periods per week. Professor Beggs. Prerequisite: Bridge Design 403.

Reinforced Concrete 405. Properties of cement and concrete. Methods of reinforced concrete construction. Mechanics of reinforced concrete beams, slabs and columns. First term, 3 hours a week, consisting of 2 recitations and 1 problem exercise of 3 hours. Professor Constant.

Concrete Construction 406. Design of reinforced concrete structures such as foundations, bridges, viaducts, dams, retaining walls, towers and buildings. Second term, 3 hours a week, consisting of 2 recitations and 1 drawing exercise of 3 hours. Professor Constant.

Water Power 407. Collection, control and use of water for power purposes; selection of water wheels; laboratory measurements of the flow of water. Second term, 4 hours a week. Professor Smith. Prerequisite: Hydraulics 302. Beginning 1921-22, this course will be elective in first term, 3 hours a week; but without the laboratory work.

Water Supply 408. Collection, purification and distribution of public water supplies. Professor Smith. Prerequisite: Hydraulics 302.

Highway Engineering 409. History of highways, materials and methods of construction. Cost data. Professor Harris and Mr. MacMillan.

Sewerage 410. Studies in the design of sewers and the treatment and disposal of sewage. Prerequisite: Hydraulics 302. Professor Smith.

Railway Economics 411. Economic principles governing the location of railways. Relation of operating expenses and probable traffic, etc. Professor Harris.

Gas Engines 412. Thermodynamics of gas engines, gas engine cycles, fuels and combustion; valves and valve gears, carburetion, ignition, governing, cooling; detailed study of various types of gasoline, gas and oil engines and their accessories; gas engine design. Laboratory tests. Prerequisites: Thermodynamics 309, Machine Design 306. Mr. Culver.

## COURSES NOT INCLUDED IN PRECEDING DEPARTMENTS

Graphics 201 *a*. Elementary Drafting. Especial emphasis on architectural, including structural steel, application. Elective in sophomore and higher years. First term, one exercise a week. Taken with course 201 *b* for a three-hour credit. Professor Willson.

Graphics 201 *b*. Descriptive Geometry. The fundamental problems of the point, line and plane, with applications to developable and other surfaces, and including trihedrals. Practically applied in the solution of problems on the drawing-board and by the construction of models. Elective in sophomore and higher years. Prerequisite to course 202 *b*, first term, two periods a week. Professor Willson.

Graphics 202 *a*. Extension of 201 *a*. Second term, one exercise a week, but taken in connection with 202 *b* for a three-hour credit. Elective in sophomore and higher years. Professor Willson.

Graphics 202 *b*. Descriptive Geometry. Advanced course, with applications. Elective in sophomore and higher years when 201 *b* has been taken. Two periods a week in second term. Professor Willson.

Graphics 202 *c*. Stereotomy. Applications of descriptive geometry to problems in stone cutting. Taken with 202 *b* as an alternative to 202 *a* when the equivalent of the latter has already been taken. Elective in sophomore and higher years, second term, one exercise a week. Professor Willson.

Surveying 302. A general outline of methods of surveying and their uses. Professor Harris.

Physical Geography 302. Morphology of the continents. Professor Libbey.

Thermodynamics 309. Heat Power Engineering 310. For description, see Department of Civil Engineering. Mr. Culver.

330. Ancient Oriental Literature. Lectures and preceptorial conferences on the literature of the Egyptians, Babylonians, Assyrians and Hebrews, and on the Phoenicians, Hittites and the minor peoples of the eastern Mediterranean basin. In each case the literature will be related to the history, and an effort made to display the interesting interrelations and transmissions. Members of the course will read selections from the literature in the best modern translations, and will make brief reports from time to time. Professor Rogers.

\*401, 402. Elementary Sanskrit. Grammar, exercises and reading, with comparison of sounds and forms with the Latin, Greek and Germanic. This course is intended especially for students of the Classical and Germanic languages. Professor Robbins.

\*407. Philosophy and History of Modern Science. A non-technical course in the development of scientific thought from the time of Copernicus and Galileo to the present. Professor Spaulding.

\*401. History and Psychology of Education. This course is designed to meet the needs of students intending to teach. Open to all students of psychology as an elective. Professor McComas.

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\* Also listed as a graduate course.

## DEPARTMENT OF MILITARY SCIENCE

CAPTAIN JOHN E. McMAHON, F.A., *Professor of Military Science and Tactics.*

CAPTAIN JOHN S. McTAGGART, F.A.

CAPTAIN WILLIAM K. McCLURE, JR., F.A.

The Department of Military Science includes a Field Artillery Unit of the Reserve Officers' Training Corps.

The primary object of the Reserve Officers' Training Corps is to provide systematic military training at civil educational institutions for the purpose of qualifying selected students of such institutions as reserve officers in the military forces of the United States. It is intended to attain this object during the time that students are pursuing their general or professional studies with the least practicable interference with their civil careers, by employing methods designed to fit men physically and mentally for pursuits of peace as well as pursuits of war. It is believed that such military training will aid greatly in the development of better citizens.

### EQUIPMENT

The latest Field Artillery equipment is available for instruction purposes so that a complete course in the most recent Field Artillery methods is given. The equipment consists of:

- a. One battery of 3 inch guns.
- b. Range finding, fire control, radio, signal and engineer equipment as prescribed for one battalion of Field Artillery.
- c. One gun and caisson with limbers, sights, fuzes setters and accessories of each of the following types:

155mm gun Filloux  
155mm Howitzer  
75mm Field gun—American  
75mm Field gun—British  
75mm Field gun—French  
4.7 inch gun

d. Miscellaneous Equipment:

2 5-ton tractors  
1 Dodge touring car  
1 8-passenger observation car  
2 Trucks, cargo  
2 Trucks, ammunition  
1 Repair truck  
2 Motorcycles with side cars  
2 Sets sectionalized projectiles  
2 Browning machine guns  
2 Browning automatic rifles  
1 set sub-calibre tubes  
1 Flash battery outfit  
30 Officers field saddles

e. Animals:

70 riding horses  
20 polo ponies  
4 mules

A Field Artillery Detachment of enlisted men consisting of one 1st Sergeant, 1 Supply Sergeant, 1 Stable Sergeant, 1 Sergeant, 1 Horseshoer, 1 Saddler, 2 Mechanics, and 30 Privates is on duty to take care of the animals and equipment.

#### GENERAL PLAN

The object of this course is to give all students enrolled a thorough physical training, inculcate in them respect for

all lawful authority, and to teach the fundamentals of the military profession, leadership, and a special technical knowledge required to enable them to serve efficiently in the Field Artillery.

The course is an authorized elective open to all undergraduates of the University who are physically fit. Graduate students and members of the Faculty may also be enrolled.

It is planned to cover a period of four years of academic work and at least one summer camp. Those desiring to complete the course in three years may do so by electing two courses in military science each term in their sophomore year. Any student electing this course is expected to do so with the idea that he will, unless prevented by necessity, complete it. Upon its satisfactory completion and upon being awarded a degree by the University, he will accept from the President of the United States a commission as Second Lieutenant of the Field Artillery Section of the Officers Reserve Corps.

During the academic year there will be no required drills nor military formations except those in connection with physical training. Members of the Unit will not be under military discipline except in summer camps and during physical training.

The four years' course is divided into two parts: (1) The first two years—basic; (2) The last two years—advanced. All courses in military science are year courses and a student can withdraw only at the end of the scholastic year except under extraordinary circumstances. Candidates having completed the basic course satisfactorily may elect to complete the advanced course and will be paid by the Government during the last two years commutation of rations amounting to approximately one hundred and forty dollars a year. A student once electing the advanced course must complete it as a prerequisite to graduation.

## SUMMER CAMPS

Two summer camps will be held in connection with the course in Military Science; the attendance will be voluntary at the first and compulsory at the second.

One will be a basic camp which students may attend while they are taking the basic course.

The second will be a camp for those students who have agreed to complete the advance course and they must attend at the end of the junior year unless prevented by unforeseen circumstances.

Any graduate under the age of twenty-one years at date of graduation, shall, before becoming eligible for appointment as a reserve officer, be required to attend one camp subsequent to his graduation and prior to being commissioned.

The camps will be of six weeks duration and will open within a few days after Commencement. The camps will be held at Camp Knox, Kentucky, 18 miles from Louisville. They will be devoted to practical Field Artillery work including target practice with the 3-inch guns. Transportation to and from Princeton or equivalent transportation, uniforms, equipment, subsistence and medical attendance will be furnished those students attending summer camps.

All the Field Artillery organizations from the different universities will be at Camp Knox during the summer so that ample opportunity will be given to students for athletic competition, recreation, and a chance to meet men from other universities.

## COMMISSIONS

In order to receive a commission, a student in the Department of Military Science must complete the course as prescribed below and must graduate from one of the divisions of the department of instruction. This commission

as a Second Lieutenant, Field Artillery Officers Reserve Corps, covers a period of five years from date of acceptance.

The President is also authorized to appoint and commission as temporary Second Lieutenant of the United States Army an officer who has been commissioned in the Officers Reserve Corps (upon the officer's request).

(a) A period of appointment is not to exceed six months, the officer to receive the allowances now provided by law for that grade, and pay at the rate of \$100 per month.

(b) He will be attached to a Unit of the Regular Army for duty during this period.

(c) Upon expiration of such service with the Regular Army such officer shall revert to his status as a reserve officer.

(d) Graduates from the R. O. T. C. who have been commissioned in the Officers Reserve Corps and desire to undergo a period of training not to exceed six months will make timely application for the appointment.

### THE COURSE

Students entering the Department of Military Science and Tactics must complete by the end of sophomore year: 1. A course in freshman Mathematics. 2. A course in freshman Physics.

### FRESHMAN YEAR

Military Science 101. Ordnance and Gunnery. First term, 3 hours a week: Metals used in ordnance construction, manufacture of forgings for guns, construction of modern guns, stresses and strains acting on guns, construction of the 3-inch field gun, nomenclature, assembling and disassembling its parts, fire control instruments, principles of optics applied to them, gunnery, trajectory, influences on the trajectory, calculation of firing data.

Military Science 102. Prerequisite: Military Science 101. Ordnance and Gunnery. Second term, 3 hours a week. Gunnery. Permutations, combinations, probabilities, laws of errors, application to Field Artillery firing, logarithms, slide rule, ammunition, fuzes, gun powder, explosives, effects of artillery fire, construction of the 155mm G.P.F., 155mm Howitzer, British, French and American 75mm guns.

*Physical Training.* Freshmen enrolled in the Department of Military Science will be required to conform to the regulations of the University governing physical education of freshmen in general. The course will include: 1. Close order work. 2. Setting up exercises. 3. Personal contact drill. 4. Elementary wrestling. 5. Boxing. 6. Mass games and competitions. 7. Individual physical efficiency tests.

During part of the freshman year 12 hours physical education will be devoted to practical work on the 3-inch guns, instruction in the preparation for the examination of gunners, and work as a gun squad.

#### SOPHOMORE YEAR

Military Science 201. Prerequisite Military Science 102. Administration and Military Law. First term, 3 hours a week. Organization of Field Artillery, the organization of a light battery, military correspondence, battery records, property responsibility, military courtesy, the common law, military law, courts martial organization, evidence, procedure, articles of war, rules of land warfare, peace conferences, moot courts.

Military Science 202. Prerequisite Military Science 201. Hippology and Gas Engines. Second term, 3 hours a week. Conformation of the horse, lameness and disease, age by the teeth, bitting, stable hygiene, shoeing, gaits; the gas engine, modern types, ignition, carburetor, lubrication, valve and spark timing, cooling systems, construction of the modern car, transmissions, clutches, springs and suspen-

sion, differentials, practical work in the operation and maintenance of motor vehicles.

*Physical Training.* Sophomores enrolled in the Department of Military Science will take two two-hour periods of equitation and horsemanship per week during both terms. The work covered during the first term will include saddling, bitting, fitting of saddles, establishing confidence in the rider, the military seat, mounted gymnastics, road marches. The work during the second term will include riding at the different gaits, jumping, posting, mounted exercises, harnessing, driving, principles of draft, exercises with battery mounted.

Those students who are active candidates for athletic teams may by the direction of the Professor of Military Science and Tactics be excused from riding during the season in which they are actually competing. Upon the termination of this particular sport they will automatically revert back to the riding classes. This also applies to the riding classes in the junior and senior years.

#### JUNIOR YEAR

**Military Science 301.** Prerequisite: Military Science 202. Topography and Communication. First term, 3 hours a week. Map scales, maps, study of contours, map reading, orientation, running a traverse, panoramic and position sketches, projections, firing charts, laying guns, elements of electricity, methods of communication, the buzzer, the telephone, the switch board, principles of radio communication, liaison, communication lines, artillery nets.

**Military Science 302.** Prerequisite: Military Science 301. Artillery Firing. Second term, 3 hours a week. Calculation of firing data, application of the laws of probabilities to Field Artillery firing, laws of errors, dispersion, preparation of fire, observation of fire, conduct of fire, smoke bomb practice, sub-calibre practice.

*Physical Training.* Students enrolled in the Department of Military Science will take two two-hour periods of equitation and horsemanship per week during both terms. Instruction in polo will constitute part of the riding course. The work during the year will include mounted gymnastics and games, jumping, mounted exercises, preliminary training of the horse, cross country riding, road marches, qualification as members of the battery reconnaissance detail.

### SENIOR YEAR

Military Science 401. Prerequisite: Military Science 302. Minor Tactics and Field Engineering. First term, 3 hours a week. Organization, tactics of the various arms with special relation to the use of Field Artillery, scouting, carrying information, communications, field orders, map problems involving practical use of Field Artillery, minor tactics and map manoeuvres involving the different arms of the service, field fortifications, preparation of the ground for attack and defense, entrenchments, trench equipment, artillery emplacements, camouflage, bridges and demolition, principles of military strategy.

Military Science 402. Prerequisite: Military Science 401. Military History and Policy of the United States. Second term, 3 hours a week. A critical study of our military history and a survey of the most important campaigns and battles of the United States including the late war. The results of our military policy.

*Physical Training.* Seniors enrolled in the Department of Military Science will take two two-hour periods of riding each week throughout both terms. The course will include polo and advanced equitation and horsemanship.

## DEPARTMENT OF MUSIC

ALEXANDER RUSSELL, Mus.B., A.G.O. *Director of Music and University Organist*

The aim of the Department of Music is to cultivate a knowledge of music among the students of the University by means of lectures on musical subjects, recitals, and by the encouragement of student activities in music, particularly as evidenced in the student choir (The Chapel Choir), the Glee Clubs, the student orchestra (Orphic Order), and other student musical organizations.

Emphasis is laid upon the development of taste and appreciation rather than upon the technical side of music. The courses offered are planned along lines of general academic training, and it is not the aim of the Department to develop professional musicians, but rather trained listeners of music, men who shall learn to understand and appreciate music in the same degree that they appreciate and understand other arts.

At the same time, students who evidence special talent in any particular phase of music (as singers, pianists, organists, violinists, or in composition, etc.) will be given the opportunity to pursue studies in these branches, by means of special arrangements with the head of the Department.

The following extra-curriculum courses are at present open to all students without tuition fees:

1. A course of weekly Saturday afternoon organ recitals on the Henry C. Frick organ in Procter Hall. From Thanksgiving to Easter. Programs covering the literature of music from ancient to modern times.

2. A course in the History and Appreciation of Music (from the standpoint of the listener), one hour weekly,

from October to June. Illustrated by instrumental and vocal music. No knowledge of music necessary for entrance to this course.

3. A course in the Harmony and Theory of Music. Advanced and elementary classes. Students taking this course will be required to pass a preliminary examination in the rudiments of music. Weekly, one hour.

4. Practice in orchestral playing in the Orphic Order. Open to students able to play an orchestral instrument. Weekly, one hour, October to May.

5. Practice in band playing in the University Band. Two hours weekly.

6. Practice in singing in Chapel Choir. Number of members limited by conditions. Admission upon qualification, according to vacancies open.

7. Preceptorial conferences in organ and piano playing. Open to students possessing necessary qualifications.

## PART V

### GENERAL REGULATIONS



## GENERAL REGULATIONS

### TERMS AND VACATIONS

The Annual Commencement takes place on the Tuesday preceding the last Wednesday but one in June. The University opens on the Tuesday thirty-eight weeks preceding the date of the Annual Commencement.

The formal opening exercises of the next academic year (1920-1921) are expected to take place on September 28, 1920.

The academic year is divided into two terms. The Summer Vacation extends from Commencement Day to the opening of the next academic year. Recesses are taken at Thanksgiving, Christmas and Easter and at the end of the First Term.

### REGULATIONS CONCERNING REGISTRATION AND THE CHOICE OF ELECTIVES

#### REGISTRATION

At the beginning of the academic year each undergraduate student shall report in person at the Registrar's Office before 3 p. m. on the Tuesday on which the University opens, and register his full name, home address, and Princeton address.

In every case of neglect or delay in registration three absences will be recorded against the student for each day that the registration is delayed. Serious cases will be punished by putting the student on probation, by suspension, or otherwise, as the Faculty may determine.

#### CHOICE OF ELECTIVES

It is necessary to obtain from each student his choice of electives as early as possible, so that the rolls of the

elective classes may be made out before the opening of the term.

All electives for the following term must be chosen, approved by the Advisors, and the cards recording the choices must be filed in the Registrar's Office, two weeks before the beginning of the final examination of each term.

For each day of delay in reporting electives a penalty of two dollars will be imposed, unless the penalty is remitted for cause on recommendation of the Executive Committee of the Board of Advisors, by the Dean of the Faculty. No changes in the choice made of electives will be permitted, except for reasons approved by the Executive Committee of the Board of Advisors. Applications for such changes must be made in writing, and addressed to the Executive Committee through its Secretary, the Registrar, and no change will be permitted, except to correct irregularities or to bring a student's choice into conformity with the University regulations, later than one week before the beginning of class exercises for the First Term, or, for the Second Term, after the final date for filing electives.

Serious cases shall be punished more severely as the Faculty may determine. If the student enter any elective class after exercises with that class have been held, he shall be reported by the instructor as absent from those exercises.

#### REGULATIONS CONCERNING ATTENDANCE

1. The Dean of the College has charge of all matters pertaining to attendance on chapel and class exercises. Office hours from 2 to 3 p. m. daily except Saturday, in Nassau Hall.

2. Every undergraduate student in residence at the University is required to attend at least one-half of the Sunday chapel services each quarter, unless excused by the President or the Dean of the College. Failure to comply with this rule will render him liable to suspension.

3. In case of persistent neglect to attend Sunday chapel services the Dean of the College has authority to compel attendance at specified times and under specified conditions, under penalty of suspension.

4. Juniors who in their sophomore year maintained a general standing of first or second group, and seniors who in their junior year maintained a general standing of first or second group, are excused from compulsory attendance upon class exercises as long as they maintain a general standing of first or second group.

5. Every other undergraduate student is required to attend the scheduled exercises of his class. A student who for any cause incurs 30 absences in any term or in any two successive terms must take a course of three hours a week in the next term, which shall displace one of the regular courses which would otherwise be taken by that student. He will thus become deficient to the extent of one course. This deficiency is to be made up later by the satisfactory completion of an extra course in some one term. All absences above 30 will be counted toward an additional extra course. In case of an unavoidable absence for a prolonged period, the application of this rule may be modified by the Faculty upon recommendation of the Dean of the College.

6. If any senior becomes liable for an extra course through absences incurred in the second term, the awarding of his degree shall be deferred until after Commencement. Exemption from the application of this rule may be granted by the Faculty upon the recommendation of the Dean of the College.

7. Any undergraduate student, except those excused from compulsory attendance in accordance with paragraph 4, who absents himself from any class exercise either immediately before or immediately after any vacation during the academic year, shall be placed upon probation if, in the

opinion of the Dean of the College, his absence has not been caused by necessity. A student so placed upon probation shall be deprived of the privilege of engaging in any extra curriculum activity requiring absence from any class exercise during his period of probation, and any student thus placed upon probation who absents himself unnecessarily from any class exercise during his period of probation shall be liable to suspension or dismissal. Every absence incurred before or after vacations shall be counted as a single absence and shall be charged against the gratuity.

8. Flagrant cases of absence will necessitate immediate withdrawal from the University.

#### HONOR SYSTEM

All written examinations, tests, and written recitations are conducted under the honor system. A student is not watched during an examination by an officer of the University, but he is required to write on his paper a pledge that he has not been guilty of any dishonesty or irregularity in connection with the examination.

The administration of the honor system is in the hands of a student committee, by whose rules it is the recognized duty of every student to report to the committee any evidence of dishonesty in examination that may come under his observation. If after investigation of such evidence the committee finds a student guilty of dishonesty, it reports his case to the Faculty with a recommendation that he be finally dismissed from the University.

#### REGULATIONS CONCERNING CONDITIONS AND ABSENCE FROM EXAMINATIONS

##### I. *Conditions*

At the end of each term reports are made to the Registrar of the standing of every student in the courses which he has taken. If the student's work in a course is above the

passing grade he is reported in one of the five groups described on page 152. If this work is not above the passing grade he is reported as conditioned in the course.

A student is conditioned in a course:

(1) If he fails to satisfy the requirements of the course. In determining his failure the work of the term as well as the examination is taken into account.

(2) If he is excluded from the examination by a Department on recommendation of his instructor, because his work done in the term with the instructor has been unsatisfactory.

(3) If he is excluded from the examination by a Department on recommendation of a laboratory instructor, because his work done in the term with the laboratory instructor has been unsatisfactory.

(4) If he is absent from the examination, for any cause, provided his term grade in the course is below the passing grade.

(5) If he is absent from the examination, for any cause, except illness or some equally compelling reason, even if his term grade in the course is above the passing grade. In cases of justifiable absence the examination may be postponed, provided his term grade in the course is above the passing grade, if the necessary absence occurs (1) at the time of examination; (2) or immediately preceding it; (3) or has extended over a considerable portion of the term. Whenever practicable, permission to postpone an examination must be obtained in advance from the Dean of the Faculty or the Registrar. Such a postponed examination must be taken at the time set for the removal of conditions by examination. The results of this examination are to be combined with the record of the term's work to determine whether or not the student has satisfied the requirements of the course. If the requirements of the course are not satis-

fied, the student is conditioned in the course as if he had taken the regular examination.

*Note.*—In case of absence covering more than half a term, the term will not be counted toward fulfilling the requirements for graduation. In case of protracted absence covering less than half a term the student's schedule for the term will generally be reduced, and he will not be allowed to take examinations in all his courses.

## II. *Removal of Conditions*

A. Conditions are of two classes:

(1) Class F (Failure in the course), in which the failure is such that the condition may be removed by examination.

(2) Class R (Repeating of the course), in which the failure is so serious that the condition may not be removed by examination. Such a condition will be imposed when a student whose work during the term has been below the passing grade fails in the final examination, but no student whose work during the term has been above the passing grade shall be given a Class R condition because of failure in the final examination.

*Note.*—A condition incurred by exclusion from the examination is of the R Class. A condition incurred by absence from the examination is of the F Class, if the term grade is above the passing grade. If the term grade is below the passing grade, the instructor in charge of the course shall report whether the condition is of the F Class or of the R Class.

B. (1) Examinations for the removal of conditions of the F Class will be held for all students in September in the two weeks beginning on the third Monday before the opening of the academic year. Conditions which are not removed at this time are transferred to the R Class.

Examinations for the removal of conditions of the F

Class incurred by seniors in either term of senior year will be held in the senior vacation.

(2) A condition of the R Class may be removed only by taking again and satisfactorily completing the course in which the condition was incurred or by taking and satisfactorily completing a course which is a lawful substitute for the one in which the condition was incurred. If a substitute is desired, permission to take it must be obtained from the Registrar before the opening of the term.

A senior who in the second term of senior year incurs not more than one condition of the R class shall be allowed to try to remove this condition by examination in the Fall.

a. There is no lawful substitute for a required course. The course in which the failure occurred must be taken again.

b. Any one course in a group of which one or more courses must be chosen is a lawful substitute for any other course of that group.

c. Any free elective is a lawful substitute for a free elective.

C. A student who, after the close of the September examinations, has any conditions remaining against him or is obliged to take an extra course because of absences or an entrance condition, shall at once proceed to remove the conditions or meet the obligation of the extra course by taking the requisite number of courses. His schedule of courses must be approved at the opening of the year by his faculty advisor and the Registrar. The courses taken for this purpose will displace an equal number of advanced courses, so that his schedule shall contain the same number of courses as that in the regular schedule of his class.

### *III. Failure Resulting in Loss of Membership in the University*

(1) A student who has conditions at the end of a term

covering half, or more, of the work of that term, is dropped from the University.

(2) A student of any of the three upper classes who in the two terms of an academic year has incurred conditions of the R Class covering nine hours or more, or who, by failure to remove conditions of the F Class in September, has at that time conditions of the R Class amounting to nine hours or more, is dropped from the University.

(3) A member of the freshman class who in the two terms of an academic year has incurred conditions of the R Class amounting to twelve hours or more, or who, by failure to remove conditions of the F Class in September, has at that time conditions of the R Class amounting to twelve hours or more, is dropped from the University.

(4) A student whose deficiencies, resulting from the displacement of regular courses by courses which have been taken to remove conditions of the R Class, or by courses taken because of absences or an entrance condition, amount to five or more courses, is dropped from the University.

#### IV. *Terms of Readmission*

A student who has been dropped from the University for failure in his studies and who wishes to re-enter must make application to do so through the Registrar. If his application is granted, and he re-enters the University, he will be on trial for one term, this trial to be terminable at any time by the Faculty if his record is unsatisfactory.

(1) A student of the Department of Civil Engineering dropped at the end of the first term is required to leave Princeton for at least a term. After a term's absence, if his application for readmission is granted, he may be admitted to the next lower class at the beginning of the academic year.

(2) A student of any other Department dropped at the

end of the first term is required to leave Princeton for at least a term. After a term's absence, if his application for readmission is granted, he may be admitted:

(a) to the next lower class at the beginning of the academic year.

(b) or as a qualifying student, with an arrangement of studies which will make it possible for him to meet the requirements for graduation at some time after the graduation of his class.

(3) A student of the Department of Civil Engineering dropped at the end of the second term may apply for admission to the next lower class. If his application is granted he may enter the next lower class at the beginning of the next academic year, or, with the permission of the Committee on Examinations and Standing, he may leave Princeton for a term, and enter the next lower class at the beginning of the second term of the next academic year.

(4) (a) A student of any other Department dropped at the end of the second term may apply for admission to the next lower class. If his application is granted he may enter the next lower class at the beginning of the next academic year.

(b) If he wishes to continue his studies as a qualifying student, he is required to leave Princeton for at least a term. After a term's absence, if his application for readmission is granted, he may be admitted as a qualifying student, with an arrangement of studies which will make it possible for him to meet the requirements for graduation at some time after the graduation of his class.

## *V. General Regulations Concerning Conditioned and Readmitted Students*

(1) A student who is under conditions is not allowed to take in any term a larger number of courses than that constituting the regular work of the term. Courses taken to

remove conditions of the R Class or because of absences or entrance conditions become a part of the regular schedule, and displace more advanced courses which might otherwise be taken. A number of courses equivalent to those thus displaced must be taken in some later term.

(2) A student who at the beginning of a term is not under conditions, but who has been obliged in previous terms, for whatever reasons, to omit one or more courses, so that he is not in full standing with his class, may apply to the Registrar for permission to take a larger number of courses than that constituting the regular work of the term. If the application is granted, he may take one extra course, and not more than one, in each succeeding term, unless in any term he receives a condition. In case he receives a condition, the privilege of taking an extra course is revoked.

(3) A senior whose average standing in the preceding term is in a group higher than the fifth, may apply for permission to take an extra course, even though he has conditions.

(4) No student who requires fewer than five courses for graduation shall be permitted to take fewer than four courses in his last term. He shall be held responsible for the completion of all the courses which he takes in that term.

(5) A student whose deficiencies, resulting from the displacement of regular courses by those which have been taken to remove conditions of the R Class, or by those taken for absences or an extra condition, amount to three or more courses, shall be ranked as a candidate for graduation one term later than the class of which he was a member.

## VI. *Removal of Entrance Conditions*

(1) Opportunities for the removal of entrance conditions by examination are given only at the regular entrance examinations in June and September.

(2) A student admitted with entrance conditions will

have such conditions cancelled if in his freshman year he maintains a standing of third general group, or higher, throughout the year.

(3) A student admitted with entrance conditions, who fails to maintain standing of at least third general group throughout the freshman year, will have such conditions cancelled in those subjects in which he maintains standing of a third group or higher, throughout the year.

(4) No student under entrance conditions will be admitted to the sophomore class, except by express permission of the Committee on Examination and Standing. If this permission is granted, the student will be required to take for the removal of the entrance condition a course in the subject in which his condition lies. The course so taken will displace one of the student's regular courses. See II C and V (1).

### VII. *Fees*

A fee of \$3 is charged for each examination taken for the removal of a condition; also for the examination in a course which has been repeated or which has been taken for the removal of a condition.

### VIII. *Administration of the Rules*

The administration of the rules concerning conditions, and all other rules which concern the standing of a student in his class, or the standards of scholarship in general, is in charge of the Committee on Examinations and Standing. The Dean of the Faculty is Chairman of this Committee, and the Registrar is Secretary. Matters to be brought before the Committee should ordinarily be presented to the Registrar in writing, or may be presented in person at a meeting of the Committee.

## FRESHMAN TESTS

(1) At three set times in each term general uniform tests will be held in all the subjects of freshman year, and upon a combination of the marks obtained in these tests and in the recitations, a report of the standing of each student shall be handed in to the Registrar's office within five days from the date of the test.

(2) The deficiencies reported shall be investigated in personal interviews with the students for the purpose of finding out the nature and cause of such deficiencies.

(3) A student who is deficient in eight or more hours shall be put on probation and shall be debarred from participation in all extra-curriculum activities.

(4) A student who flagrantly and persistently neglects his work shall be compelled to withdraw from the University, and shall be subject to the rules governing students dropped at the end of the term.

## STANDING

The results of the term examinations are combined with those of the work done during the term to decide the relative standing or rank of the student.

The rank in each course is determined by the instructor, who computes from the term work and examinations the marks of the class; those who have satisfied the requirements of the course are classified in five groups in the order of merit.

The first group indicates very high standing and contains not more than ten per cent of the entire (college) class.

The second group indicates high standing and contains not more than twenty per cent of the entire (college) class.

The third group indicates medium standing and contains not more than thirty-five per cent of the entire (college) class.

The fourth group indicates low standing and contains not

more than twenty-five per cent of the entire (college) class.

The fifth group contains the remainder; it indicates very low standing.

The general rank of a student is determined by combining his group numbers in the several courses in proportion to the allotted schedule time of each. The students whose averages are highest and above an established limit are assigned to the first general group; those next highest to the second general group, and so on through the general groups.

A report of the standing of each student is made to his parent or guardian by the Registrar at the close of the first term and at the close of the year. The latter report gives also the standing for the whole year.

### DEGREES

A student who passes his final examinations is ordinarily recommended by the Faculty for the degree appropriate to his course, and if the recommendation is approved by the Trustees, the degree is conferred at Commencement and the diploma of the University is given.

### FINAL RANK

The final rank of members of the graduating class is computed by combining the averages for the several years of the course, except that the average for the freshman year is omitted in those cases in which it would lower the standing of the student.

### COMMENCEMENT SPEAKERS

The student whose individual rank is highest is ordinarily awarded the Latin Salutatory by vote of the Faculty. The Valedictory is awarded with special regard to the qualifications of the student as a valedictorian as well as on the ground of scholarship.

In the award of all degrees and honors, regard is had to

the conduct of the student during his course, and any student who has incurred serious discipline may be debarred from the rank to which otherwise his scholarship would have entitled him.

## PART VI

# PHYSICAL EDUCATION, ATHLETICS, AND STUDENT HEALTH



## PHYSICAL EDUCATION, ATHLETICS, AND STUDENT HEALTH

The University lays especial stress upon all measures and provisions that promote the health and physical efficiency of the students. Princeton is particularly happy in its location and in its possession of a campus of 800 acres on the south slope of the ridge upon which the town is built. This open space between the University buildings and Lake Carnegie furnishes unusual opportunities for outdoor sports of all kinds in close proximity to the dormitories and the Gymnasium, which serves as the center of administration and provides convenient and adequate facilities for bathing and dressing. The factors concerned in this phase of University work may be grouped under three general heads:

(1) Provision for outdoor sports and athletic contests:

Lake Carnegie for rowing and canoeing; the tennis courts; the golf course; a board track for outdoor running in winter; the playing fields, Brokaw, Goldie, Poe, University, and the Palmer Memorial Stadium, for both intramural and intercollegiate teams in football, baseball, track athletics, and soccer.

(2) Buildings:

The Gymnasium, Brokaw Swimming Pool, Osborn Athletic Club House, the Baseball Cage, and University Field House; the Class of '87 Boat House, the Canoe House, the McCormick Field House, and the Isabella McCosh Infirmary.

(3) Administration:

The University Sanitary Committee, the Department of Hygiene and Physical Education, the Faculty Committee on Outdoor Sports, and the University Athletic Association work in close cooperation to formulate procedure, to give

instruction, and to supervise the general conduct of all phases of conditions and activities which affect student health and efficiency.

### I. PHYSICAL EDUCATION AND ATHLETICS

Physical education and athletics are organized and conducted for the purpose of giving every student a thorough course in general physical training under medical supervision and expert teaching, and to give opportunity and encouragement to participate under the direction of skilled coaches in various forms of competitive athletics for the mental and educational values that come from such experience. Every effort is made to keep expenditures for intercollegiate athletics on a moderate scale, to reduce the time required of candidates for intercollegiate teams, to combat abuses that from time to time have crept into the administration of intercollegiate athletics, and to promote in practice and contest ideals of sportsmanship and fair play. At the same time the extension among all the students in participation in various forms of competitive athletics is vigorously promoted through a large variety of intramural contests, both indoors and out.

A thorough medical and physical examination is made of each student on entering college, on the basis of which he is given advice and direction as to his physical activities during his college course, so that he will secure the greatest value from this phase of his work. This physical examination is supplemented by periodical examination of all those students who are candidates for competitive teams, and those who are below par physically as a result either of an illness or some other physical handicap.

Every freshman is required to take a course in Physical Education for three periods a week throughout the year. This work comprises a course in general physical training, composed of physical drill, personal contact drill, elementary

boxing, wrestling, rowing, swimming, life saving, group games, and mass athletics. This course is designed to improve body control and strength, to stimulate the development of mental and physical alertness, to establish habits of regular exercise and to give an experience in various kinds of recreative sports that will be useful in after life.

Every encouragement and facility is placed at the disposal of upper class students to take part in intramural and inter-collegiate athletic sports, both indoors and out, because of their body building, social and character forming values. These activities are promoted and supervised by the students' Intracollegiate Athletic Association, the Department of Hygiene and Physical Education, and the University Athletic Association.

Following is a detailed description of the facilities for the various phases of work mentioned above:

#### UNIVERSITY FIELD

This field, used chiefly for baseball, has in connection with it the following buildings: (1) The *Osborn Field House*, which is a University athletic clubhouse, the gift of Henry F. Osborn, of the Class of 1877, and contains training quarters, dining room, parlor, bedrooms, baths, etc.; (2) the *Cage* for indoor winter practice, a brick structure with a clear floor space of 60 x 140 feet; (3) the *Field House*, containing dressing-rooms, lockers, and baths for the University and visiting teams.

#### THE BROKAW MEMORIAL BUILDING

The Brokaw Memorial Gateway and Building were erected in 1892 by I. V. Brokaw, Esq., of New York, in memory of his son, Frederick Brokaw, of the Class of 1892. A wing of this building contains a concrete swimming pool, lined with white tile, 100 feet long by 25 feet wide, which is architecturally combined with the Gymnasium. The Brokaw

Building contains also three handball courts and dressing rooms for the swimming squad and for visiting teams.

The *Gymnasium*, erected by the alumni, forms with Blair, Little, and Patton Halls, part of the western boundary of the central campus, nearly half a mile in length.

The façade of the gymnasium comprises two full stories and a tower. The main entrance opens into a trophy hall 50 feet wide by 130 feet long, and affords space for a large number of athletic trophies, offices for the members of the Department of Hygiene and Physical Education, and the Field Artillery Unit, R. O. T. C.; physical examination rooms, and rooms for boxing, and wrestling. The hall is surrounded by a gallery which is used for trophies and banners.

The Gymnasium proper is entered through the trophy hall. It is 166 feet long and 101 feet wide, and is almost as high as the two-story portion of the building. About its walls is an elevated running-track, twelve laps to the mile. It contains, besides the main hall, which is equipped with apparatus for physical training and competitive games, a standard indoor rifle-range, locker and dressing rooms, lavatories, hot and cold shower baths, seven handball courts, and a rowing room equipped with sixteen machines for indoor practice. The Gymnasium is open daily throughout the university year.

#### FIELDS AND COURTS

*Brokaw Field* was provided by the alumni for the benefit of undergraduates who are not members of University teams. It contains three baseball diamonds and a 120-yard straight-away running track. *Goldie Field*, named after Mr. George Goldie, for many years Director of the Gymnasium, closely adjoins Brokaw Field and is large enough for a baseball diamond and three soccer fields. There are twenty-eight tennis courts on terraces bordering these fields. *Poe Field* was

laid out in memory of John Prentiss Poe, of the Class of 1895, who was killed on September 25, 1915, in France while serving in the British Army. This field, which is located immediately south of Goldie Field, is 375 feet by 600 feet and provides space for two baseball diamonds or three football fields.

#### CLASS OF 1886 MEMORIAL BUILDING

This building, presented to the University by the Class of 1886, is located on the Princeton golf course. The building contains ample provision in the way of bath and locker rooms, reception rooms, etc., designed for the use of members of the Princeton Golf Club, with dormitory and kitchen facilities for the use of the members of the Class of 1886 during their reunions. Students of the University are eligible to membership in the Golf Club. The 18-hole course extends over 225 acres on University property.

#### CLASS OF 1887 BOAT HOUSE

This building, erected by the Class of 1887, is located on the shore of Lake Carnegie, to the west of Washington Road. The style of architecture is Gothic. The dimensions of the buildings are 170 feet by 100 feet. The first floor contains accommodations for thirty-two shells and a workshop. On the second floor are two locker rooms, a large club room, and an office for the rowing coach.

#### CANOE HOUSE

Located on the Shore Drive on Lake Carnegie, this building is used by the members of the University Canoe Club for the housing of private canoes. Membership is open to all students on payment of a small annual fee. Besides Lake Carnegie, the Millstone River and Stony Brook afford attractive canoeing opportunities.

## PALMER MEMORIAL STADIUM

The Palmer Memorial Stadium, the gift of Edgar Palmer of the Class of 1903, was erected by him as a memorial to his father, the late Stephen S. Palmer, a trustee and generous benefactor of the University, the donor of the Palmer Physical Laboratory. The Stadium is on the tract known as the College Farm, which is leased by the University to the Athletic Association. It is a U-shaped structure with the open end towards the south, permitting a view of the woods along Lake Carnegie, with glimpses of the lake in the distance. It is built of reinforced concrete throughout and seats more than forty-one thousand spectators.

The Stadium is used for football and track athletics. The playing field is specially designed and constructed, with a very extensive drainage system to provide for complete and quick drainage of all parts of the field. The running track consists of a quarter-mile track with two hundred and twenty-yard straightaway.

Twenty acres of meadow land adjoining the Stadium give ample parking space for all vehicles which may be brought to the largest games.

## NINETEEN ELEVEN FOOTBALL TEAM FIELD HOUSE

The Nineteen Eleven Football Team Field House, erected near the Stadium, is the gift of Cyrus H. McCormick, Esq., of the Class of 1879. It provides ample dressing rooms for the members of the football and track teams and for members of visiting teams in those two sports, and has accommodations for two hundred and fifty men. It is designed to harmonize architecturally with the Stadium.

## II. STUDENT HEALTH SERVICE

The healthfulness of the town of Princeton is exceptional, a recent report of the State Board of Health showing that

among towns in New Jersey having a population of five thousand or more, the mortality of Princeton is easily the lowest.

Nevertheless, the University assumes the responsibility of maintaining a close supervision over those conditions that affect student health, in order that (a) students who are ill may be given immediate and expert care; (b) the incidence and spread of infectious diseases may be reduced to the lowest terms; and (c) so that the general working efficiency of the students may be maintained at the highest level.

The immediate responsibility for this function rests jointly in the University Sanitary Committee and the Department of Hygiene and Physical Education.

The Sanitary Committee has general control of the administration of the Infirmary, the care of patients, the relations of physicians and nurses to the Infirmary and to each other, the supervision of the sanitary conditions of the University buildings, grounds, and dining halls, and the lodging houses in town occupied by students. It is an administrative body as regards the details of supervision, and is advisory to the Board of Trustees on matters that may affect buildings and grounds.

The Department of Hygiene and Physical Education is responsible for instruction in personal hygiene, the medical examination of students, the supervision of candidates for competitive teams, and the administration of the courses in Physical Education.

A careful supervision is maintained over the dining halls to provide good sanitary conditions and pure food, and over those employees who come into contact with the food to eliminate disease carriers. In addition a periodical examination is made of the milk supplied to the students. Further, a careful sanitary inspection, repeated as often as conditions may indicate, is made of all the lodging houses in town which are occupied by students who are unable to find ac-

commodations on the campus. Proprietors of these lodging houses are required to report without delay to the University office, any cases of illness which may occur among the student in their houses; also the janitors in the University dormitories are required to turn in a daily report of any students who may be ill in their rooms. These reports of illness are immediately forwarded to the University physician to be investigated, and if, in his judgment, the student should be removed to the Infirmary, it is done.

#### ISABELLA MC COSH INFIRMARY

The Isabella McCosh Infirmary is the University hospital. It is equipped with all the most modern conveniences of hospital construction and comprises two separate buildings connected by a corridor. One of these is reserved for contagious diseases and for cases requiring special isolation. Facilities at present permit the isolation and care of four different kinds of contagious diseases at one time, if necessary.

The Infirmary is under the constant and careful supervision of the University Sanitary Committee and the University physicians, and Infirmarian who is an experienced trained nurse. Five assistant nurses are in residence, and a housekeeper and regular servant staff are maintained. Where special nursing is required an additional charge is made.

As the Infirmary is not fully endowed, each student pays an annual fee of \$7 (\$3.50 per term) which in all cases of ordinary illness procures for him, without other charge, the necessary care, including board, nursing, laundry and physician's service. When an illness extends beyond a week, board is charged after the first week at the rate which the student pays at his usual boarding place. When he is at the Infirmary, his board is rebated at his boarding place.

Consultations and dispensary treatment are given daily between 8.30 and 10.30 p. m. by the University physician at the Infirmary without extra charge. Students are encouraged to avail themselves of these opportunities so that minor disabilities may be given early and effective treatment, thus preventing the delay which may lead to more serious conditions, and the consequent loss of time from their studies.

Daily reports of admissions and discharges from the Infirmary are made to the several administrative offices of the University, and in case of the appearance of a contagious disease, those students who have been in contact with the sick student, are kept under careful supervision, in order to make it possible to give early treatment whenever necessary and to prevent the spread of the infection.

#### INFIRMARY REGULATIONS

1. The Sanitary Committee shall have general control of the medical administration of the Infirmary, the care of patients, and the relations of physicians or nurses to the Infirmary or to each other, subject to the approval of the Board of Trustees.

2. The University Physician will be in attendance at the Infirmary every day from 8.30 to 10.30 a. m., or can be consulted at his office, 34 Mercer Street, during regular office hours. There will be no charge for students for consultation and treatment at the Infirmary.

3. Any physician legally registered or licensed to practise medicine in the State of New Jersey will be privileged to attend patients in the Infirmary upon the approval of the Sanitary Committee. Physicians who desire to attend patients at the Infirmary will make application to the Secretary of the Sanitary Committee. This rule does not apply to physicians or surgeons called in consultation by an attending physician.

4. Assignments of patients to individual rooms at the Infirmary will be made at the discretion of the University Physician.

5. Should the number of patients at the Infirmary at any time become so large as to require the removal elsewhere of convalescents to make room for cases of serious illness it shall be the duty of the University Physician to determine which patients may with safety be removed in the emergency.

6. Only emergency cases will be operated on at the Infirmary.

7. Every patient will be required to leave the Infirmary promptly after being dismissed by his physician.

8. If special nurses are required they will be procured at the direction of the University Physician and controlled by the Infirmarian and an extra charge of \$2 a day made to the patient. A charge for special nursing is made for all contagious diseases.

9. Visitors will be admitted between the hours of 1.30 and 5.30 p. m. Visitors are not admitted to the contagious ward.

Every effort is made to humanize the service for sick students and to give the patients and their visiting parents the kind of personal help and attention that is so desirable in time of trouble. In this respect, as in others to be mentioned, the services of the Ladies' Auxiliary are invaluable. This organization has a membership of nearly six hundred ladies who have made themselves responsible for contributions to purchase for use in the Infirmary, linen, surgical dressings, furniture, apparatus and equipment; they have established a fund to provide special nursing for boys who cannot afford the extra expense; they have collected an endowment fund to meet the expenses of the Infirmary when they exceed the amount available from student fees; they have provided and entirely maintain a sep-

arate building for a nurses' home, thus releasing space for sick students; they are engaged in raising a fund for a new Infirmary; and they have adopted the plan of appointing a visiting committee, the members of which keep in helpful touch with patients and visiting parents. The services and generosity of this organization therefore not only help to relieve the University of a heavy financial burden, but have also established an atmosphere of personal interest and helpfulness in the Infirmary that prevents it from becoming institutionalized.

At the end of each year, a careful statistical study is made of the cases of illness which have occurred, for the purpose of comparison with records of previous years, and to serve as a basis for such action as may seem necessary to correct conditions that may appear to be in any way contributory to the occurrence of illness among the students.



PART VII

UNIVERSITY LIBRARY, RELIGIOUS  
WORSHIP AND ACTIVITIES, PUBLIC  
LECTURES, UNIVERSITY STORE,  
UNIVERSITY PRESS



## THE UNIVERSITY LIBRARY

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HENRY BARTLETT VAN HOESEN, PH.D., *Assistant Librarian*

ANSON ELY MORSE, PH.D., *History Reference Librarian*

HOWARD SEAVOY LEACH, A.M., *Reference Librarian*

CHARLOTTE MARTINS, *Superintendent of Purchase*

REBECCA SARAH CAWLEY, *Superintendent of Cataloguing*

WALTER RUE COTTRELL, *Superintendent of Circulation*

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HOMER TALBOT, A.M., *Municipal Reference Librarian*

JANE WRIGHT, *Art Reference Librarian*

GEORGE MANN PECK, A.B., *Department Librarian, Guyot Hall*

FLORENCE LOUISE HURD, *Department Librarian, Economics*

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LEWIS FREDERICK PEASE, A.B., *Curator of the Music Library*

DAVID PATON, A.B., LL.B., *Curator of Egyptology and Assyriology*

LOUIS ELLSWORTH LAFLIN, C.E., *Curator of the Cook Chess Collection*

JOHN I. SCULL, A.M., *Curator of Ex Libris*

SYDNEY RICHMOND TABER, A.M., *Curator of European War Posters Collection*

## THE UNIVERSITY LIBRARY

The Library began with the College, Governor Belcher, the patron of the College, directing his especial attention and interest to it, and leaving to it his collection of 474 volumes. When the first catalogue was printed in 1760 the Library consisted of about 1,300 volumes. It was decimated during the Revolution and in 1796 numbered only 2,300 volumes. It was partly destroyed by fire in 1802. In 1816 it numbered 7,000 volumes; in 1839, 8,000; and in 1850 it had advanced to 9,313 volumes. In 1868 it contained but 14,000 volumes, without separate building or librarian.

## THE CHANCELLOR GREEN LIBRARY

In 1868 the Elizabeth Fund for the purchase of books was created by John C. Green, Esq., and in 1872-73 he erected a library building, named in honor of Chancellor Green. The Chancellor Green Library building is the working library of the University for undergraduates. It contains the standard and latest works, as well as reference books, in all departments. In addition it contains the following special collections:

*The Charles Ewing Green Alcove.* The alcove facing the public entrance to the Chancellor Green Library has been set aside as a memorial to the late Charles Ewing Green '60. It contains a memorial tablet erected by the late Mrs. Charles E. Green, and a select library of classical philology.

*The Class of 1878 Library* of Chemistry, established and endowed in 1889.

*The Class of 1883 Library* of Political Science and Jurisprudence, founded and endowed in 1893.

*The Class of 1889 Library* of American History, established and endowed in 1899.

*The Bower Collection*, a selection of books mainly on History and Literature from the library of the late Laurence Foster Bower '96.

*The Frothingham Collection* of Literature on Revolutionary Communism.

## PYNE LIBRARY

Provision was made on the occasion of the Sesquicentennial by the late Mrs. Percy Rivington Pyne, for a new building with a capacity of 1,200,000 volumes gross and shelving at present for about 750,000, besides administration rooms, twenty rooms for instruction and research, a room for the exhibition of rare books, and a series of rooms

for special reading and reference work in History, Political Science and Social Sciences. This building forms a hollow quadrangle of about 160 feet square, connected with the Chancellor Green Library by a delivery room, of 50 by 20 feet, and is fitted with modern improvements. On the exterior of the western tower gateway are statutes of Presidents Witherspoon and McCosh, James Madison, Class of 1771, fourth President of the United States, and Oliver Ellsworth, Class of 1766, second Chief Justice of the United States Supreme Court.

#### THE CENTRAL COLLECTION

The general collection, which occupies the united buildings, consists of 432,354 volumes, including deposits, and 126,631 unbound periodicals and pamphlets. It includes, in addition to those already mentioned, the following special collections:

#### SPECIAL COLLECTIONS

*The Autograph-Manuscript Collection*, relating chiefly to the history of the University. This includes the Pyne-Henry collection, the Abbott papers, the Hunt papers, the Miller papers, the Maclean papers, recently presented by the Misses Maclean, and miscellaneous.

*The Morgan Collection of Virgils*, presented by Junius S. Morgan, '88.

*The Pierson Civil War Collection*, presented by John S. Pierson, '40; 6,720 volumes and several thousand unbound pamphlets and clippings.

*The Paton Spanish War Collection* of newspapers and magazines, presented by William Agnew Paton, Esq.

*The European War Collection*, including the *Strong Collection* on the Economic Aspects, and the *Pitney Collection* on the International Law Aspects of the war.

*The Princeton University Collection*, including the large collection of Princetoniana presented by Professor William Libbey, '77, the Witherspoon collection, and the Cleveland collection.

*The Class of 1875 Library* of English Poetry and Drama: *The Mrs. J. O. H. Pitney Collection* of books on International Law and Diplomacy, presented by Mrs. John Oliver Halsted Pitney.

*The Music Library*, founded by Rudolph E. Schirmer, '80, John W. Garrett, '95, and Lewis F. Pease, '95.

*The Garrett Collection of Oriental Manuscripts*, consisting of about 2,400 manuscripts, chiefly in Arabic, but including 334 manuscripts in twenty-five other languages, deposited in the University Library, and including books on law, medicine, mathematics, natural sciences, poetry, history, biography, geography, travels, rhetoric, grammar, and lexicography, as well as works on the Mohammedan religion and the exegesis of the Koran.

*The Collection of Cuneiform Documents*, consisting of approximately 1,200 items founded by M. Taylor Pyne, '77, Junius S. Morgan, '88, and others; and enlarged by gifts of the late Professor R. E. Brünnow, Robert Garrett, '97, Cyrus H. McCormick, '79, Russell W. Moore, '83, M. Taylor Pyne, '77, Wilfred J. Funk, '09, George W. Gilmore, '83, and others.

*The Willard Porter Law Library*, presented by Mrs. Willard Hall Porter and her son, W. H. Porter, Jr., 1903.

*The Pliny Fisk Statistical Library*, presented by Pliny Fisk '81.

*The Samuel Miller Collection*, presented by Samuel Miller Breckinridge Long, 1903, in memory of Judge Samuel Miller Breckinridge, '50.

*The Patterson Collection* of rare editions of Horace and

other rare and choice books, presented by Robert W. Patterson, '76.

*The Bergen Collection* of rare and choice books, chiefly modern, presented by the Rev. G. S. Bergen in memory of his son, Ernest G. Bergen, '95.

*The Ivy L. Lee Collection*, on Russia, presented by Ivy L. Lee, '98.

*The Whig Hall Collection*, presented by Whig Hall.

*The Clio Hall Collection*, presented by Clio Hall.

*The Philadelphian Society Collection*, presented by the Philadelphian Society.

*The Nelson Collection of New Jerseyana*; 2,520 volumes and pamphlets relating to the history of New Jersey, presented by the Hon. William Nelson, (hon. 1896).

*The Collection of New Jersey Imprints*, presented by the Hon. William Nelson, (hon. 1896).

*The Collection of Books for the Blind*, English, Greek, and Latin, printed in American Braille and New York Point.

*The David Paton Collection of Oriental Philology and History*. (See Semitic Seminary under Seminary and other Special Libraries).

*The Van Deusen Collection of Railroadiana*, deposited by E. Van Deusen, Esq.

*The Brünnnow Collection* of Oriental Studies, the library of the late Professor R. E. Brünnnow, presented by several trustees and other friends.

*The Magie Collection*, the law library of the late Chancellor William Jay Magie, '52, presented by William Francis Magie, '79, and Henrietta Oakley Magie.

*The William Paton Library*, presented by David Paton, '74, in memory of his brother.

*The Photostat Collection* of rare books in photostat copy.

Special collections, other than books or manuscripts, are:

*The Garrett Collection of Coins*, deposited in the University Library. This collection contains an unusually fine series of American coins, as well as specimens from many foreign countries and many commemorative medals.

*The Hutton Collection of Death Masks*, consisting of 81 masks, presented by the late Laurence Hutton, (hon. 1897).

*The Hutton Memorial Collection*, consisting of 801 books, together with autographed portraits, paintings, etc., from the library of the late Laurence Hutton, (hon. 1897,) left by him to trustees to be put in some safe place for a permanent memorial and presented by them to the University.

*The Meirs Collection of Cruikshankiana*, consisting of 894 volumes, with 695 broadsides, original water color drawings, oil paintings, autograph letters, etc., presented by Richard W. Meirs, '88.

*The Lytle Collection of European War Relics*, collected by Ridgeley Lytle, '13.

*The Robertson Collection of European War Relics*, first deposited by Malcolm Robertson, '15, and lately presented to the Library by his father, Dr. Victor H. Robertson.

*The European War Posters Collection*, presented by Benjamin Strong (hon. 1918), John W. Garrett, '95, Sydney R. Taber, '83, and others.

*The Strong Collection of Emergency Currency of the European War*, presented by Benjamin Strong (hon. 1918).

#### SEMINARY AND OTHER SPECIAL LIBRARIES

Certain rooms in the Pyne Library Building are available for the use of seminaries. Several have been assigned and provided with special libraries, partly by loan from the main collection, but chiefly by special endowment and purchase. The following have been established:

*The Philosophical Seminary.* Founded by Mrs. C. B. Alexander (ethics), and by the Class of 1882 (logic and metaphysics). Location: southeast corner, first floor.

*The Economics Seminary.* Founded by the Class of 1888. Location: southeast corner, first floor, and fifth floor. (See also The Pliny Fisk Statistical Library, under Special Collections.)

*The Political Seminary.* Founded by various alumni and friends. Location: southeast corner, second floor.

*The Classical Seminary.* Founded by a friend of the University. Location: southwest corner.

*The Latin Pro-Seminary.* Location: Room 43, McCosh Hall.

*The English Seminary.* Founded and supported by Charles Scribner, '75. Location: northwest corner, first floor.

*The Romance Seminary.* Founded by the Class of 1890. Location: southwest corner, first floor.

*The Mathematical Seminary.* Founded by the late John L. Cadwalader, '56; Professor M. Allen Starr, M.D., LL.D., '76; David B. Jones, '76; Thomas D. Jones, '76; Chandler W. Riker, '76; and the Hon. Adrian Riker, '79. Location: northwest corner, second floor.

*The Historical Seminary.* Founded by Mr. and Mrs. M. Taylor Pyne in memory of Robert Stockton Pyne. Location: southeast corner, second floor.

*The Germanic Seminary.* Founded by the Class of 1891, and including the library of the late Professor Willard Humphreys. Location: southeast corner, first floor.

*The Semitic Seminary,* including the Paton Collection of Oriental Philology and History. Location: north stack, west tower, fifth floor, and room adjoining.

## DEPARTMENT LIBRARIES

These are libraries selected from the general collection, and kept in proximity to the corresponding laboratories. The following are organized:

*Art*; the Marquand Collection, presented by Professor Allan Marquand, '74. Art Museum.

*Astronomy*. Observatory of Instruction.

*Biology* (including Botany and Zoölogy); founded by Charles W. McAlpin, '88, and supported largely by Mr. McAlpin and the Frank Hartley Memorial Fund. Guyot Hall.

*Geology and Palaeontology*. Guyot Hall.

*Engineering*; including the Class of 1878 Library of Engineering. School of Science, second floor.

*Physics*; the Brackett Library, presented by the late Stephen S. Palmer, David B. Jones '76 and Thomas D. Jones '76. Palmer Physical Laboratory.

## USE OF THE LIBRARY

The Library is open from 8 A. M. to 10 P. M. on weekdays and, for reference use, from 12 M. to 5 P. M. on Sundays during term time. In vacation it is open on week days from 9 A. M. to 1 P. M.

Books may be drawn by officers and students of the University and Theological Seminary, and by any person properly introduced. The number of books which may be taken is limited to three in the case of undergraduates, with the exception of seniors, who may take five. Officers, Fellows, and graduate students may take any reasonable number. Books may be kept by undergraduates for two weeks, by Fellows and graduate students for four weeks, and by officers for any reasonable time. All books may be renewed when due, unless wanted by other readers.

Fines are charged at the rate of two cents a day on all books kept over time. If an overdue book is wanted at the Library it may be sent for and a charge of ten cents made for messenger. Postal cards are sent as a reminder of books overdue only when the books are wanted by others. No books may be drawn while there are unpaid fines.

A pamphlet manual of rules and directions is issued free of charge.

#### THE HALL LIBRARIES

The American Whig and Cliosophic Societies and the Philadelphian Society have turned over a large part of their books to the University Library, but each has in its own building a convenient working library.

#### THE THEOLOGICAL SEMINARY LIBRARY

Students of the University are allowed to use the library of the Princeton Theological Seminary, which contains 108,140 volumes, distributed into two buildings. The one, the general library, is open for consultation and loan of books from 9 A. M. to 5 P. M. and from 7 to 10 P. M. on week-days, except Saturday, when the hours are from 9 A. M. to 1 P. M. and from 7 to 10 P. M. The other, the reference library, is open every week-day from 9 A. M. to 5 P. M., and from 7 to 10 P. M.

#### SUMMARY OF LIBRARIES

University Library .....	432,354
Hall Libraries .....	5,000
Theological Seminary Library.....	108,140
Total (exclusive of pamphlets and duplicates). .	545,494

## RELIGIOUS WORSHIP AND ACTIVITIES

The President of the University is the responsible center of the religious activities of the University, having direct charge of the chapel services, while the executive details are ordinarily cared for through the Board of Directors and officers of the Philadelphian Society in Murray-Dodge Hall.

This Society was founded in 1825. From it, in 1877, went the group of students who established the Student Department of the Y. M. C. A., out of which has sprung the World's Student Christian Federation. The Student Volunteer Movement for Foreign Missions also was started by members of the Society.

Murray Hall, erected in 1879 from a bequest left for the purposes of the Society by Hamilton Murray, of the Class of 1872, contains an auditorium and a room for general social and business purposes. Dodge Hall, connected with Murray Hall by a cloister, is the gift of the late William E. Dodge, and his son, Cleveland H. Dodge, of the Class of 1879, in memory of the late W. Earl Dodge of the same Class. The privileges of the building are extended to all students of the University, irrespective of their relations to the Philadelphian Society.

### I. RELIGIOUS COURSES AND LECTURES

A very complete series of courses covering the different approaches to the field of religion is ordinarily presented to the undergraduates of the University and voluntary courses in the History of Religions, the Philosophy of Religion, the Literary Study of the Bible, the Scientific Approach to Christianity, the Old Testament, the New Testament, Foreign Missions, Social Service, and the general problems of morality and character, have been offered,

and a special series of open lectures on the Fundamentals of Christianity has been established.

## II. RELIGIOUS WORSHIP\*

Divine Service is held in Marquand Chapel each Sunday morning at 11 o'clock, at which attendance is required. Evening service is held either in Marquand Chapel or in union with the town churches Sunday at 7:30 P. M.

A service is held each week-day morning from 9:50 to 10:05 upon which attendance is voluntary.

The sacrament of Holy Communion is celebrated by the President of the University in Marquand Chapel twice during each college year—in the fall and during the spring term.

Any student may register for Sunday attendance in one of the town churches, and his presence there will be credited in place of attendance at the University Service.

## III. DIRECTORS AND OFFICERS

The executive and administrative religious work of the University centres in the following Board of Directors.

### BOARD OF DIRECTORS

John Grier Hibben '82, <i>Ex-Officio</i>	Ralph W. Harbison '98
John McDowell '94, <i>Chairman</i>	Charles E. Beury '03
J. Ross Stevenson, Princeton Theological Seminary	Norman M. Thomas '05
Robert P. Wilder '86	Norman M. Thomas '05
Paul Matthews '87	Timothy N. Pfeiffer '08
Robert E. Speer '89	Cleveland E. Dodge '09
T. H. P. Sailer '89	George W. Perkins, Jr., '17
Robert Garrett '97	Charles W. McAlpin '88,
	<i>Treasurer</i>

*General Secretary*

Samuel M. Shoemaker 1916

\* Owing to the destruction of Marquand Chapel by fire, the weekday chapel services will be held in Murray-Dodge Hall and the Sunday services in Alexander Hall.

**THE ST. PAUL SOCIETY**

The St. Paul Society is composed of students who are connected with the Episcopal Church and is affiliated as the Episcopal Department of the Philadelphian Society. Its work includes the maintaining of Sunday services in a number of small communities near Princeton, assisting in the work of the local parish and seeking to strengthen and deepen the religious life of the Episcopalian students.

## PUBLIC LECTURES

## TRASK LECTURES

The income from \$10,000, presented by the late Spencer Trask, of the Class of 1866, is available to secure the services of eminent men to deliver public lectures before the University on subjects of special interest.

## STAFFORD LITTLE LECTURESHIP ON PUBLIC AFFAIRS

Founded in 1899 with a gift of \$10,000 by the late Henry Stafford Little, of the Class of 1844. At the suggestion of the donor, the Hon. Grover Cleveland, ex-President of the United States, was invited to deliver before the students of the University "such lectures as he might be disposed to give from year to year," and until his death in 1908 Mr. Cleveland was the Stafford Little Lecturer. Since that time it has been customary to have a different lecturer every year.

The Stafford Little Lectures are published by the Princeton University Press.

THE LOUIS CLARK VANUXEM FOUNDATION OF  
PRINCETON UNIVERSITY

A bequest of \$25,000 under the will of Louis Clark Vanuxem, of the Class of 1879. By direction of the executors, the income of this foundation is to be used for a series of from four to six public lectures before the University annually, at least one half of which shall be on subjects of current scientific interest. The lectures are to be printed and distributed among schools and libraries generally. They are published annually by the Princeton University Press.

## UNIVERSITY LECTURES ON CHRISTIANITY

Established in 1914 by the Board of Trustees as an annual course of university lectures on the Nature of Christianity or on the History and Literature of the Bible, to be given each year by a scholar of recognized ability and learning.

## THE ALBERT PLAUT CHEMICAL CLUB FUND

Established in 1912 with a gift of \$5,000 by Mr. Albert Plaut, of New York. The income is to be used for the benefit of the Chemical Club, and primarily for providing lectures before the club by men of distinction in the field of industrial chemistry or a related science.

## PRINCETON UNIVERSITY STORE

The Princeton University Store is a coöperative association, membership in which is open to all students and other members of the University upon the deposit of a small fee. The store deals in textbooks used in the University, stationery, athletic goods, Princeton souvenirs, confectionery, etc. The members of the store have the privilege of purchasing at a discount from the regular retail price and in addition receive a yearly dividend based on the total amount of their purchases.

## PRINCETON UNIVERSITY PRESS

The Princeton University Press, whose building was erected and equipped by Charles Scribner, of the Class of 1875, is organized under the act providing for "associations not for pecuniary profit," and its objects, as set forth in its charter, are "in the interest of Princeton University to maintain and operate a printing and publishing plant for the promotion of education and scholarship, and to serve the University by manufacturing and distributing its publications." It also publishes several periodicals and does considerable printing in addition to the work furnished by Princeton University.

To date its list of book publications comprises approximately ninety volumes. They may be obtained from any bookseller or direct from the publishers and a complete catalogue may be had by addressing the Princeton University Press, Princeton, N. J.



## PART VIII

EXPENSES, ALLOTMENT OF ROOMS,  
UNIVERSITY DINING HALLS, UNI-  
VERSITY BILLS, PRIZES, REMIS-  
SION OF TUITION, SCHOLAR-  
SHIPS, MINISTERIAL AND  
CHARITABLE FUNDS,  
SELF-HELP



## EXPENSES

*Board, 36 weeks .....	\$7.50 per week
Washing, 36 weeks .....	75 cents per week
†Tuition and Public Room fee.....	\$250.00 per annum
Library fee .....	\$5.00 per annum
‡Laboratory fee, extra for chemical courses involving laboratory work....	\$7.50 to \$18.00 per term
Laboratory fee, extra for the courses Physics 101, 102; Physics 201, 202.....	\$5.00 per annum
Apparatus deposits (see below)	
Room rent in dormitories (according to location of room) .....	\$23.00 to \$250.00 per annum
Heat, fixed charge (according to lo- cation of room).....	\$10.00 to \$28.00 per annum
Light, fixed charge (according to location of room) .....	\$12.00 to \$28.00 per annum
Infirmary fee .....	\$7.00 per annum
Department of Physical Education fee.....	\$10.00 per annum
Matriculation fee, payable upon matriculation.....	\$5.00
Graduation fee, payable second term, senior year .....	\$12.00

*Apparatus Deposits.*—Students pursuing laboratory courses are required to make deposits to pay for apparatus injured or destroyed. At the end of the term any excess in favor of the student is placed to his credit on the bill for the next term. The deposits in the courses are: General

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\* Freshmen and sophomores are required to board at the University Dining Halls. The rate of board for the year 1920-21 will be \$7.50 per week, but students who are unable to pay the full price are given an opportunity to secure employment as waiters at the Dining Halls and thereby earn all or a part of the price of board.

† Remission of Tuition is granted under certain conditions to students needing assistance. For full information regarding Remission of Tuition, see later.

‡ Use of Chemical Laboratory, one afternoon a week \$7.50 per term; two afternoons a week \$13.00 per term; three afternoons a week \$18.00 per term.

Physics—\$5; Chemistry—\$10 to \$15 for each course (two terms); Geodesy—freshmen, second term, \$10; sophomores, second term, \$15; juniors, both terms, \$10; seniors, first term, \$5.

Students taking any of the courses in graphics will require a drafting outfit costing from \$18 to \$25.

## ESTIMATE OF ANNUAL EXPENSES

### UNDERGRADUATE

Average minimum, medium, and maximum estimates of the necessary expenses for one year of a student occupying an unfurnished room in a dormitory have been prepared as follows:

	<i>Min.</i>	<i>Med.</i>	<i>Max.</i>
*Board, 36 weeks at \$7.50.....	\$270.00	\$270.00	\$270.00
Washing, 36 weeks, at 75 cents per week	27.00	27.00	27.00
†Tuition and Public Room fee.....	250.00	250.00	250.00
Library fee .....	5.00	5.00	5.00
Infirmary fee .....	7.00	7.00	7.00
Department of Physical Education fee...	10.00	10.00	10.00
Room Rent .....	35.00	115.00	250.00
Heat (per room) .....	10.00	19.00	28.00
Light (per room) .....	12.00	20.00	28.00
Matriculation fee (entering students) ..	5.00	5.00	5.00
Graduation fee (seniors) .....	12.00	12.00	12.00

Laboratory fees for courses in chemistry and physics, apparatus deposits, books, Hall dues, clothes, furnishing for rooms, incidentals, and traveling and vacation expenses have not been included in these estimates.

\* Freshmen and sophomores are required to board at the University Dining Halls. The rate of board for the year 1920-21 will be \$7.50 per week, but students who are unable to pay the full price are given an opportunity to secure employment as waiters at the Dining Halls and thereby earn all or a part of the price of board.

† Remission of Tuition is granted under certain conditions to students needing assistance. For full information see page 217.

## RULES GOVERNING THE ALLOTMENT AND RENTAL OF ROOMS

I. Rooms will be assigned *members of the University* for occupation during the following academic year between the 15th of May and 1st of June of each year.

II. This assignment will embrace:

(a) All rooms occupied by students whose connection with the University will terminate at the end of the academic year.

(b) The rooms of all seniors, whether with room-mate or not (unless the room may be retained by a graduate or for a brother, as elsewhere provided in the rules).

(c) All rooms for which the lease has not been properly renewed.

III. An allotment may also take place at the close of the first term of each academic year for the purpose of assigning such rooms as may then fall vacant.

IV. (a) The assignment of rooms will in all cases not herein specially excepted take place in such a manner that specific room shall be assigned by lot.

(b) The rooms to be assigned are classified according to the amount of their rental, without heat and light, in eight groups as listed on pages 197-201. The rental in all cases includes the necessary painting, papering, etc.

(c) The applicants for rooms will be divided into corresponding groups, each applicant being required to inform the Treasurer in writing before the 10th of May, or the 20th of January, as the case may be, both of his intention to enter the drawing and of the group in which he wishes to be placed.

*Every applicant for a room shall agree beforehand, and shall be required, to take the room which may be assigned to him by lot in the group in which he has made application.*

(d) Each drawing will begin with the first group and proceed from that group successively through the several higher groups. Any applicant who does not obtain a room in the group to which he first asked to be assigned may be allowed to draw in the next higher group.

(e) If there be any rooms remaining unassigned after a drawing such rooms may be assigned by subsequent allotment at such time before the end of the year or of the term as the Treasurer may appoint; such supplementary allotment to be made under the same rule as the principal allotment with this exception, that the rooms disposed of by means of it may be classified in the same way or not, at the discretion of the Treasurer.

(f) a. Priority in the drawing will be determined by the length of time the applicants have been members of the University. The first drawing will include the names of all applicants who have been members of the University for more than one year. A second drawing will include the names of all applicants who have been members of the University for one year or less.

b. If the application for a double room is signed by students who have been members of the University different lengths of time, it will be classified and placed in the drawing in which the student who has been a member of the University the shortest length of time would be placed.

(g) a. On or before the 5th day of May there will be drawn by lot from all single and double rooms available for occupancy in the fall, accommodations for 150 *entering freshmen*, equitably distributed among the several groups according to rental.

b. The Registrar of the University will send to all candidates for admission to the *freshman class*, who have been *admitted at the June examinations*, a statement of the location and number of rooms reserved throughout the dor-

mitories for the use of freshmen, together with the rental to be charged in each case, and a statement of the owner's valuation of the furniture which may have been left in any of the rooms. The student to whom a room may be allotted is under no obligation to purchase furniture which may have been allowed to remain in the rooms as the property of the former occupant. Accompanying this statement will be a form of application blank which may be filed with the Treasurer at any time prior to July 23, upon which the entering student may indicate in what group he desires to draw for a room and whether, in the event of his failure to draw a room in the group first chosen, he is willing to enter his application in the next higher group.

(h) Double rooms are separately classified and allotted in accordance with the above regulations. Only such suites as consist of a study and two bedrooms are considered double rooms within the meaning of this clause. No double room can be assigned to a single individual, nor is it within the privilege of any single individual to draw for a double room. Every application for a double room must contain the names of two persons who intend to occupy the room together and who undertake to be jointly responsible for the rent of the same.

(i) Whenever for any reason one of the occupants of a double room is permitted or obliged to cancel his room lease, the remaining occupant must vacate the room at the end of the current academic term, unless he agrees to pay the whole rent, or provide a room-mate who shall join him in signing a new lease for the remainder of the academic year.

V. (a) The tenure and liabilities of those to whom rooms are assigned under these rules shall be the tenure and liabilities expressed in the following lease, which must be signed in the case of each room allotted by the student who

is to occupy it, and by his parent or guardian. This lease must be signed and delivered to the Treasurer in each case within ten days of the allotment, except in the case of new students, provided for under Rule 4g.

This agreement, made the                    day of                    19    be-  
tween the Trustees of Princeton University and

Witnesseth that the said Trustees of Princeton University do hereby lease unto the said

Room No.        in the        Entry of        to hold for the  
University year 19   , paying therefor during the said term unto  
the said Trustees of Princeton University the yearly rental of  
\$    in two equal payments, to be made the one within the first  
four weeks of the first term of the University year, the other within  
the first four weeks of the second term of the University year.

By signing this lease the said Trustees do not become responsible for the furniture of the occupant of the room.

Furniture left in a room after the expiration of the lease remains at the owner's risk.

This lease is made on the express condition that it may be terminated by the said Trustees through their representative.

THE TRUSTEES OF PRINCETON UNIVERSITY,

By..... Treasurer  
..... Recount

### *Parent*

Guardian

## Guarulhos

(b) Any occupant of a college room may retain his room until the end of his undergraduate or graduate course, provided he annually notify the Treasurer of his intention of retaining it and sign a new lease before the 1st of May; otherwise his room will be considered vacant and will be included in the next allotment. In case an occupant of a double room be left without a room-mate at the end of the academic year, he may renew his lease upon condition of naming another student of the University who will become joint lessee with him for the following year, unless the

room-mate who leaves is a senior or a fourth-year special. It will also be the privilege of any occupant of a college room to renew his lease at the end of his own tenure in the name of his brother, when the brother is to enter the University immediately.

(c) The right to occupy a room is not transferable and terminates with the expiration of the lease. Any attempt on the part of the occupant of a college room to sell or transfer, directly or indirectly, his right of occupancy will be deemed a fraudulent transaction. The penalty for violating this rule will be forfeiture of the room by the new lessee.

(d) The occupant of a college room shall deposit with the Controller the sum of 25 cents for each key to his room that may be furnished him by the University; and all amounts paid under this clause will be refunded upon return of the key or keys furnished.

VI. (a) The seller and buyer of furniture in rooms allotted to students now in college will be required to file in the office of the Controller on or before June 15, a statement signed by each of the students concerned and by their parents or guardians, to the effect that they have agreed upon a mutually satisfactory price for such of the furniture as the buyer is willing to purchase. In the absence of such an agreement being filed on or before June 15, the owner of the furniture will be notified to remove it immediately. If this notice is not complied with, the furniture will be sold by the University authorities.

(b) If any of the rooms drawn and held in reserve for the next incoming freshman class contain furniture, the owner of the furniture will be informed that it must be removed not later than the day in September when the dormitories are opened for occupancy; unless the freshman to whom it is allotted shall elect to purchase it at the price fixed by the owner.

VII. No exchange of rooms will be allowed unless formally sanctioned in writing by the Treasurer; and then only upon terms explicitly stated in a written application signed by both parties to the proposed exchange, and not in contravention of the spirit of these rules. Such application will be kept on file in the Treasurer's office.

VIII. When rooms are vacated during a term, the rent must be paid until the end of the term. An occupant of a college room who expects to be absent on leave for a term may be released from the obligations of his lease, provided he notify the Treasurer before the beginning of the term during which he expects to be absent, and give up the room; but no abatement or drawback of room rent will be allowed for any period less than a term, except in special cases to be stated in writing, and by permission of the Treasurer.

The Faculty of the University is directed to suspend or expel every student that may be found guilty of breaking or evading these rules or of injuring or interfering with the person or property of his successor in a room; or of aiding or abetting another in such transgression, evasion, injury, or interference. The Faculty and all its officers are instructed to take the utmost pains, by ordinary or extraordinary means, to discover such offenders and prevent such offences.

The Faculty is further instructed to report, with the evidence discovered, the names of any graduate or outsider that may be guilty of such offenses to the Committee on Grounds and Buildings; and said committee is authorized and directed to procure legal counsel, and when the evidence seems to justify it to take appropriate legal proceedings against any and every offender before a court of law.

## LIST OF DORMITORY ROOMS

## \*FIRST GROUP (\$20.00 to \$43.00 a year)

## 48 SINGLE ROOMS

\$20.00 (5) Hamilton: 1 A; Reunion: 16 S M; 17 S M; 18 S M; 19 S M.  
 30.00 (6) Dod: 12 N; 12 S; 7 M; Edwards: 2 N; 5 N; 10 S.  
 35.00 (10) Edwards: 7 N; 8 N; 32 N; 35 N; 7 S; 8 S; 37 S; 40 S; 41 S; 42 S.  
 36.00 (4) West: 3 N; 4 N; 3 S; 4 S.  
 40.00 (23) Hamilton: 306; 307. West: 9 S. Edwards: 1 N; 9 N; 10 N; 12 N; 15 N; 22 N; 25 N; 37 N; 38 N; 39 N; 40 N; 2 S; 5 S; 9 S; 17 S; 20 S; 27 S; 30 S; 38 S; 39 S.

## \*SECOND GROUP (\$45.00 to \$75.00 a year)

## 88 SINGLE ROOMS

\$45.00 (13) Edwards: 18 N; 19 N; 28 N; 29 N; 41 N; 42 N; 1 S; 18 S; 19 S; 28 S; 29 S; 32 S; 35 S.  
 47.00 (5) Reunion: 1 N M; 2 N M; 1 S M; 2 S M; 3 S M.  
 50.00 (2) Brown: "A" E; "B" W.  
 52.00 (10) Edwards: 17 N; 20 N; 27 N; 30 N; 12 S; 15 S; 22 S; 25 S. West: 1 N; 2 N.  
 53.00 (6) Reunion: 13 N M; 14 N M; 15 N M; 13 S M; 14 S M; 15 S M.  
 55.00 (12) Edwards: 16 N; 21 N; 26 N; 31 N; 36 N; 11 S; 16 S; 21 S; 26 S; 31 S; 36 S. West: 10 N.  
 56.00 (1) Edwards: 11 N.  
 57.00 (1) Hamilton: 2 A.  
 60.00 (4) Brown: "C" E; "E" E; "D" W; "F" W.  
 63.00 (2) West: 1 S; 2 S.  
 65.00 (2) Witherspoon: 17 E. Cuyler: 461.  
 69.00 (14) Reunion: 4 N M; 5 N M; 6 N M; 7 N M; 8 N M; 9 N M; 10 N M; 4 S M; 5 S M; 6 S M; 7 S M; 8 S M; 9 S M; 10 S M.  
 70.00 (4) Edwards: 3 N; 4 N. Hamilton: 1 D; 1 E. Witherspoon: 17 W.  
 75.00 (12) Dod: 13 N; 13 S; 21 M; 22 M; 24 M; 25 M; 27 M. Edwards: 33 N; 34 N; 3 S; 4 S. Upper Pyne: 14.

## 4 DOUBLE ROOMS

74.00 (4) Reunion: 1 N; 2 N; 1 S; 2 S.

\* Rental prices of all rooms will be increased approximately 15 per cent from listed rates.

## \*THIRD GROUP (\$76.00 to \$110.00 a year)

## 121 Single Rooms

\$80.00 (24) Brown: 1 E; 10 E; 1 W; 10 W; 1 S E; 10 S E; 1 S W; 10 S W. Dod: 1 N; 1 S; 1 M; 3 M; 4 M; 6 M. Edwards: 13 N; 14 N; 23 N; 24 N; 33 S; 34 S. Witherspoon: 18 E; 19 E; 18 W; 19 W.

84.00 (2) West: 17 N; 20 N.

85.00 (14) Blair: 61. Cuyler: 413. Edwards: 13 S; 14 S; 23 S; 24 S. Hamilton: 1 C; 2 C. Witherspoon: 1 E; 13 E; 1 W; 13 W; 8 E M; 8 W M.

90.00 (30) Brown: 4 E; 7 E; 4 W; 7 W; 4 S E; 7 S E; 4 S W; 7 S W. Cuyler: 442; 452. Dod: 5 N; 9 N; 5 S; 9 S; 8 M; 10 M; 11 M; 13 M; 14 M; 15 M; 17 M; 18 M; 20 M. Holder: 105; 106; 2 B. Little: 46. Witherspoon: 5 E; 9 E; 5 W; 9 W.

94.00 (4) West: 18 N; 19 N; 17 S; 20 S.

100.00 (2) Blair: 1; 63.

105.00 (24) West: 5 N; 6 N; 7 N; 8 N; 9 N; 11 N; 12 N; 13 N; 14 N; 15 N; 16 N; 6 S; 7 S; 10 S; 11 S; 14 S; 15 S. Witherspoon: 2 E; 3 E; 2 W; 3 W. Little: 18.

110.00 (17) Blair: 93. Cuyler: 144; 161; 244; 411; 412; 421; 431; 432; 441; 451; 462. Holder: 14 A. Little: 15; 32; 34; 44.

## 10 DOUBLE ROOMS

84.00 (6) Reunion: 9 N; 10 N; 9 S; 10 S; 18 S; 19 S.

100.00 (4) Reunion: 11 N M; 12 N M; 11 S M; 12 S M.

## \*FOURTH GROUP (\$115.00 to \$160.00 a year)

## 39 SINGLE ROOMS

\$115.00 (5) West: 5 S; 8 S; 12 S; 13 S; 16 S.

125.00 (2) Upper Pyne: 12. Witherspoon: 20 E.

130.00 (13) Little: 16; Witherspoon: 6 E; 7 E; 10 E; 11 E; 14 E; 15 E; 6 W; 7 W; 10 W; 11 W; 14 W; 15 W.

135.00 (9) Blair: 94. Cuyler: 261; 262; 352; 362. Hamilton: 1 B; 2 B. Patton: 100; 109.

140.00 (3) Hamilton: 304; 305. Holder: 1 A.

150.00 (3) Upper Pyne: 3; 8; 13.

155.00 (1) Witherspoon: 20 W.

160.00 (3) Patton: 103; 105; 107.

\* Rental prices of all rooms will be increased approximately 15 per cent from listed rates.

## 20 DOUBLE ROOMS

\$115.00 (10) Reunion: 3 N; 4 N; 5 N; 6 N; 8 N; 3 S; 4 S; 5 S; 6 S; 8 S.  
 130.00 (6) Witherspoon: 2 E M; 9 E M; 10 E M; 2 W M; 9 W M; 10 W M.  
 135.00 (1) Hamilton: 311.  
 140.00 (2) Witherspoon: 1 E M; 1 W M.  
 160.00 (1) Little: 101.

## \*FIFTH GROUP (\$165.00 to \$200 a year)

## 45 SINGLE ROOMS

\$165.00 (14) Blair: 113; 114. Campbell: 2 A. Little: 13; 14. Patton: 14; 15; 24; 25. Witherspoon: 4 E. Cuyler 141; 142; 242; 361.  
 180.00 (7) Witherspoon: 8 E; 12 E; 16 E; 4 W; 8 W; 12 W; 16 W.  
 190.00 (5) Blair: 111; 112. Cuyler: 342. Little: 62. Patton: 101.  
 195.00 (19) Campbell: 11; 12; 13; 14; 21; 22; 23; 24; 53; 54; 55; 56; 61; 62; 63; 64; 65; 66; 1 A.  
 200.00 (4) Upper Pyne: 4; 9. Lower Pyne: 2, 8.

## 26 DOUBLE ROOMS

180.00 (4) Campbell: 3 A; 5 A; 6 A; 2 B.  
 185.00 (6) Witherspoon: 5 E. M; 6 E. M.; 7 E M; 5 W M; 6 W M; 7 W M.  
 190.00 (4) Witherspoon: 3 E M; 4 E M; 3 W M; 4 W M.  
 195.00 (4) Blair: 11; 31; 33; 41.  
 200.00 (9) Brown: 3 E; 6 E; 9 E; 12 E; 3 W; 6 W; 9 W; 12 W. Patton: 34.

## \*SIXTH GROUP (\$205.00 to \$260.00 a year)

## 18 SINGLE ROOMS

210.00 (3) Blair: 3; 4; 5.  
 215.00 (6) Hamilton: 301. Little: 63; 124; 134; 144. Patton: 91.  
 220.00 (1) Hamilton: 3 C.  
 225.00 (4) Lower Pyne: 4; 10. Upper Pyne: 5; 10.  
 245.00 (4) Little: 151; 152; 163; 164.

\* Rental prices of all rooms will be increased approximately 15 per cent from listed rates.

## 104 DOUBLE ROOMS

\$210.00 (4) Dod: 14 N; 15 N; 14 S; 15 S.  
 220.00 (44) Blair: 21; 23; 34; 43; 44; 51; 52; 53; 54; 65; 71; 73; 81; 83; 91; 95; 97. Brown: 2 E; 5 E; 8 E; 11 E; 2 W; 5 W; 8 W; 11 W. Hamilton: 3 A. Holder: 11; 12; 3 A; 7 A; 3 B; 7 B; 2 D. Little: 31; 61. Patton: 30; 31; 32; 40; 41; 42; 43; 52; 53. Brown: 12 S E; 12 S W. Hamilton: 12.  
 235.00 (3) Blair: 13; 15; 17; 64; 72; 74; 84; 92; 98. Brown: 3 S E; 6 S E; 9 S E; 3 S W; 6 S W; 9 S W. Campbell: 4 A. Dod: 2 N; 3 N; 6 N; 7 N; 10 N; 11 N; 2 S; 3 S; 6 S; 7 S; 10 S; 11 S. Holder: 4 A; 5 A; 6 A; 9 A; 10 A; 11 A; 12 A; 13 A; 8 B; 8 C. Little: 21; 23; 35; 38; 41; 43; 51; 53; 54. Patton: 33; 35; 36; 102. Lower Pyne: 15. '79 Hall: 21; 23; 31; 33; 43; 51; 53; 61.  
 250.00 (61) Blair: 6. Brown: 11 S E; 11 S W. Dod: 23 M; 26 M.

## \*SEVENTH GROUP (\$265.00 to \$325.00 a year)

## 1 SINGLE ROOM

\$270.00 (1) Little: 186.

## 189 DOUBLE ROOMS

270.00 (2) Dod: 16 M; 19 M.  
 275.00 (87) Blair: 12; 14; 16; 22; 24; 32; 42; 62; 82; 98; 101; 102; 103. Brown: 2 S E; 5 S E; 8 S E; Cuyler: 143; 163; 211; 221; 222; 231; 241; 243; 251; 311; 321; 322; 331; 341; 343; 351. Dod: 2 M; 5 M; 9 M; 12 M. Holder: 21; 51; 113; 8 A; 2 C. Little: 22; 24; 33; 36; 42; 52; 121; 123; 131; 133; 141; 143; 171. Patton: 10; 11; 13; 20; 21; 22; 23; 50; 51; 60; 61; 62; 63; 70; 71; 72; 73; 81; 82; 83; 84; 85; 90; 92; 94; 108. '79 Hall: 41. Hamilton: 11; 16; 21; 309; 310; 312.  
 300.00 (59) Campbell: 25; 26; 27; 28. Hamilton: 14; 22; 24; 308. Little: 122; 132; 142. Holder: 22; 31; 32; 33; 34; 41; 42; 52; 53; 54; 61; 62; 71; 72; 75; 76; 84;

\* Rental prices of all rooms will be increased approximately 15 per cent from listed rates.

91; 93; 94; 111; 113; 121; 122; 123; 124; 131; 132; 133; 134; 141; 142; 143; 2 A. '79 Hall: 11; 13; 22; 24; 34; 44; 52; 62; 63. Lower Pyne; 1; 5; 7; 11. Upper Pyne: 11.

310.00 (2) Blair: 7; 9.

320.00 (2) Patton: 12. '79 Hall: 32.

325.00 (45) Blair: 104; 115; 116. Campbell: 15; 31; 32; 33; 34; 41; 51; 52. Cuyler: 212; 232; 263; 312; 332; 363. Hamilton: 300; 3 B. Holder: 43; 44; 63; 64; 73; 74; 81; 82; 92; 103; 104; 112. Little: 64; 71; 72; 161; 172; 181; 185. Patton: 80; 93; 95; 104; 106. '79 Hall: 42; 54.

\*EIGHTH GROUP (\$330.00 a year and over)

28 DOUBLE ROOMS

\$350.00 (10) Little: 66; 68; 162. Campbell: 16. Lower Pyne: 3; 9. Upper Pyne: 1; 2; 6; 7.

355.00 (5) Campbell: 42; 44. '79 Hall: 12; 14; 64.

380.00 (6) Holder: 65; 66; 101; 102. Little: 182; 183.

405.00 (1) Little: 184.

420.00 (1) Blair: 2 (with privilege of a third occupant).

435.00 (1) Little: 153.

460.00 (1) Little: 143.

490.00 (1) Little: 111 (three occupants).

540.00 (1) Little: 112 (three occupants).

630.00 (1) Blair: "A" (three occupants).

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\* Rental prices of all rooms will be increased approximately 15 per cent from listed rates.

## THE UNIVERSITY DINING HALLS

Freshmen and sophomores are required to take their meals at the Dining Halls. Juniors and seniors who belong to upperclass clubs eat at those clubs, while non-club men eat either at the Dining Halls or at private boarding houses approved by the Controller. The buildings contain five large dining rooms, two of which are assigned to freshmen, two to sophomores, and one to upperclassmen. There is no fixed seating arrangement and students are encouraged to eat at any table, in their respective rooms, at which they happen at any particular meal to find congenial friends. In addition to the dining rooms, each class has a common or lounging room and a billiard room.

The Dining Halls are subject to constant sanitary inspection. The kitchen is fitted with all the best appliances for cooking and serving on a large scale, and adjoining are a bakery, an ice cream plant, a steam plant and a laundry. The Halls are in charge of a salaried manager who reports directly to the Controller. The Manager is assisted by a Dining Halls Committee of fourteen undergraduates. The object of the Dining Halls is to provide wholesome and abundant food at the cheapest rate compatible with proper service, and amid hygienic and attractive surroundings. The fact that non-club upperclassmen are preferring to eat at the Dining Halls rather than make their own arrangements is believed to indicate that the board provided is better than can be obtained elsewhere. The price of board per week will be \$7.50. Students who are unable to pay the full price of board are given employment as waiters at the Dining Halls and thereby earn all or part of the price of board. By waiting upon table for two meals each day, a student can earn his entire board. For the third meal, he sits at the table with his classmates. Students who wish to secure em-

ployment as waiters should communicate with the Secretary of the University or the Secretary of the Bureau of Self-Help.

## UNIVERSITY BILLS

All university expenses, including board, must be paid in advance to the Treasurer of the University.

Students are required to call at the Treasurer's office in the course of the first ten days of each term, and to give information as to their place of boarding, etc., so that their bills can be made out. All bills must be paid within the first four weeks of the term. Failure to comply with this rule will deprive the students of the privileges of the University until payment is made, unless excused by special vote of the Faculty.

When a student enters the University before the middle of the term he shall pay in full the usual charges for that term, with the exception of the charges for board; if he enter after the middle of the term, he shall pay one-half. For board he shall pay in proportion to the time.

When a student leaves the University, whether voluntarily or by dismissal, before the middle of any term, one half of the charges for tuition and public rooms for that term will be refunded. But in the case of temporary absence and subsequent return, although the absence be for more than half a term, no such rebate will be granted.

When a student is dismissed from the University for any cause, the advance deposit for board, heat, and light, beyond the time of dismissal, will be refunded to his parent or guardian.

When at the end of the first term the amount of the advance deposit proves to be in excess of the sum required to defray the board or room bills of any student, the excess will be credited on his bill for the next term. At the end of the academic year the amounts overpaid by

the members of the *graduating class* for board, room rent, heat, and light will be refunded by the Treasurer to the student's parent or guardian. The parent or guardian of *every undergraduate* will be advised of the amount of excess to the credit of his son or ward, and such amount will be *carried over to his credit on the bill for the first term of the following year*. In case of the withdrawal or dismissal from the University of any undergraduate at the end of the college year, such excess will be refunded by the Treasurer to the parent or guardian, when informed by the Dean of the College that such undergraduate has been withdrawn or dismissed from the University.

## PRIZES

### ALEXANDER GUTHRIE MC COSH PRIZE

The interest of \$1,500 will be given annually to that member of the senior class who shall write the best essay in philosophy, including psychology, logic, metaphysics, and the history of philosophy. The subject for 1920-1921 is: Philosophical Significance of the Concept of Evolution.

The essay must be presented on or before April 7.

### LYNDE DEBATE PRIZES

Three prizes, the income of \$5,000 contributed by Charles R. Lynde, Esq., will be awarded by a committee appointed by the Faculty, to the three successful competitors in a debate held immediately prior to the trials for the appointment of intercollegiate debaters. The debaters are six in number, three from each of the Literary Societies, and are selected by committees appointed by the Societies respectively from their own members in the Faculty.

### CLASS OF 1859 PRIZE

The interest of \$2,000, given by the Class of 1859, will be awarded to that member of the senior class who shall write the best essay on the Poems of Ralph Waldo Emerson and pass the best examination on Carlyle's "Chartism," Ruskin's "Unto this Last," and J. S. Mill's "On Liberty." The essay must be handed in on or before May 31, and the examination will be held in June.

The subject of the essay for the Class of 1922 will be Joseph Conrad.

### GEORGE POTTS BIBLE PRIZES

The yearly interest of \$1,000, given in 1867 by Mrs. Sarah H. Brown, expended in the purchase of two copies of Mat-

thew Henry's *Commentary on the Bible*, will be presented to the two best Biblical scholars of the senior class at the end of their course.

#### LYMAN H. ATWATER PRIZE IN POLITICAL SCIENCE

This prize, being the annual interest on the sum of \$1,000, contributed by the Class of 1883, was instituted as a memorial of the Rev. Lyman H. Atwater, D.D., LL. D., Professor of Political Science. It will be given to that member of the senior class who shall have passed the best examination and written the best thesis on some subject in political science, to be assigned by the professors in charge of Jurisprudence and Politics.

The thesis, which must be in scholarly form and legibly written, must be in the hands of the Chairman of the Department of History and Politics by April 1; the examination will be held on that day. The subject for the thesis in 1921 and the basis on which the examination is to be set will be: Reform of the National Budget.

#### FREDERICK BARNARD WHITE PRIZE IN ARCHITECTURE

The late Mrs. Norman White established in memory of her son, Frederick Barnard White, of the Class of 1883, a prize in architecture, yielding \$40. The prize is open to the entire junior and senior classes and to special students who take a full schedule of studies. The subject of the essay for the year 1920-1921 is: Byzantine Influence in Romanesque Architecture. The essay must be presented on or before May 15.

#### CLASS OF 1869 PRIZE IN ETHICS

The annual interest of \$3,000, given by the Class of 1869, will be awarded to that member of the senior class who shall pass the best examination in ethics and write

the best essay. The subject of the essay for the Class of 1921 may be chosen from the following: The Ethics of Aristotle; The Ethics of Self Realization; Naturalism and Ethics. The essay must be presented on or before May 10.

#### C. O. JOLINE PRIZE IN AMERICAN POLITICAL HISTORY

The sum of \$100 will be awarded annually at Commencement to that member of the graduating class who shall have maintained a creditable standing in the subject of American history, and who shall have submitted the best written dissertation. The subject of the dissertation for the year 1920-1921, is: William Howard Taft as ex-President.

The dissertation must be at least 5,000 words in length and must be accompanied by a bibliography of the subject. Specific references to the sources used must be given throughout. To be presented by April 1.

The prize will be awarded by the professor or professors in charge of the Department of American History.

#### THE NEW YORK HERALD PRIZE

The yearly interest of \$1,000, presented by James Gordon Bennett, Esq., will be given to that member of the senior class, or to the special student of satisfactory standing, who shall have taken for both terms of senior year at least two of the courses given by the Departments of History and Politics, and of Economics, and at least one course in English literature for both terms, and who shall have presented the best thesis in English prose upon some subject of contemporaneous interest in the domestic or foreign policy of the United States Government. The thesis, which must be in scholarly form and legibly written, must be in the hands of the Chairman of the Department of History and Politics, by April 1. The subject of the thesis in 1921 will be: The National Convention System.

CLASS OF 1876 MEMORIAL PRIZE FOR DEBATE IN  
POLITICAL SCIENCE

This prize is to be given annually by the Class of 1876 to the successful contestant in a debate on a subject of current interest in American politics, to be held on Washington's Birthday, said prize to be the interest of \$2,000. The competitors, four in number, one from each class, are to be chosen by a vote of their respective classes.

PHILO SHERMAN BENNETT PRIZE IN POLITICAL SCIENCE

The interest of the sum of four hundred dollars, the gift of the late Philo Sherman Bennett, of New Haven, Connecticut, will be given to that member of the senior or junior class of the University who shall write the best essay discussing the principles of free government. The essay must be in the hands of the Chairman of the Department of History and Politics by April 1.

The subject for the year 1920-1921 is: Proportional Representation.

THE BARNUM PRIZE ON FRANCO-AMERICAN RELATIONS

A prize of two hundred dollars (\$200.) is offered by William Barnum, Esq., of the Class of 1878, for the best essay on some phase of Franco-American relations before 1800. The contest is open to seniors. The subject of the essay for the year 1920-1921 is: Relations of Beaumarchais and Vergennes.

Essays in competition must be handed to the Chairman of the Department of History and Politics on or before April 1.

\*SPENCER TRASK DEBATING FUND

The interest of \$3,000, given by the late Spencer Trask, Esq., of the Class of 1866, has been used to promote de-

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\* There is at present no income from the Spencer Trask Debating Fund.

bating. One third of the interest has been awarded to the best debater in the trials for the intercollegiate debates with Yale and Harvard; one third for library books used in connection with debating; and one third for general debating expenses.

**PRIZE IN AMERICAN HISTORY, ESTABLISHED BY THE SOCIETY  
OF COLONIAL WARS IN THE STATE OF NEW JERSEY**

The sum of \$50 will be awarded each year to that undergraduate of Princeton University who shall have submitted the best written dissertation upon some subject of American Colonial history assigned by the Department of American History.

The dissertation must be at least 5,000 words in length and must be accompanied by a bibliography of the sources used. Specific references to the sources must be given throughout.

Dissertations in competition must be in the hands of the Registrar before April 1, and must be submitted anonymously. The names of the authors should be enclosed in sealed envelopes and attached to the dissertations.

The prize will be awarded by the Professor or Professors in charge of the Department of American History, and the decision will be announced at Commencement.

The subject for the year 1920-1921 is: New Jersey in the French and Indian Wars.

**GARRETT PRIZE ON LATIN AMERICA**

The sum of \$100, the gift of John W. Garrett, Esq., of the Class of 1895, will be awarded annually, at Commencement, to that member of the Princeton undergraduate body who shall have submitted the best essay upon some subject connected with Latin America.

The essay must be at least five thousand words in length and must include a bibliography of the sources used. Spec-

pecific references to the sources must also be given throughout.

The essays must be in the hands of the Chairman of the Department of History and Politics before April 1.

The subject for the essays of the year 1920-1921 is: Attempts at Confederation in Central America.

#### MANNERS PRIZES

The income from an endowment of \$6,000, the bequest of the late Edwin Manners, Esq., of the Class of 1877, is to be devoted annually to the advancement of literary and historical studies.

One half of the income will be awarded annually at Commencement to that student of the Graduate School who shall have submitted the best monograph on the history of New Jersey. This monograph must be at least 25,000 words in length, and must be accompanied by a bibliography of the subject discussed. Specific references to the sources used must be given throughout. The monograph must be in the hands of the Chairman of the Department of History and Politics by April 1. The recipient of the award shall be designated "The Nova Caesarea Scholar."

The subject for 1920-1921 is: The Delaware and Raritan Canal.

Of the other half of the income, a suitable portion shall be expended for a gold medal in the form of a tiger, and this medal with the balance of the money will be given annually at Commencement to that member of the senior class who shall write the best character study or descriptive sketch in prose or verse. The manuscripts must be in the hands of the Chairman of the Department of English by May 1. By direction of the donor, the recipient of the award shall be designated "The Winner of the Golden Tiger."

## LAURENCE HUTTON PRIZE IN HISTORY

The income from an endowment of \$2,500, given by Samuel Elliott, Esq., as a memorial to his friend, the late Laurence Hutton (hon. A.M. 1897), will be awarded annually at Commencement to that student of the University adjudged by the Faculty to have excelled in the work of the Department of History. The prize is open alike to graduate and undergraduate students.

## CHARLES IRA YOUNG MEMORIAL TABLET AND MEDAL

A memorial tablet to the late Charles Ira Young, of the Class of 1883, has been placed in the Palmer Laboratory by friends of Mr. Young.

In connection with this memorial, a bronze medal will be awarded each year to the student in the University who excels in research in Electrical Engineering, the medal to be known as the "Charles Ira Young Memorial Medal." The name of the winner of the medal is also to be inscribed each year upon the memorial tablet mentioned above.

## CLASS OF 1870 SENIOR AND JUNIOR ENGLISH PRIZES

Of the yearly interest of \$1,500, one half will be given to the best Old English scholar of the senior academic class, and one half to the best English literature scholar of the junior academic class.

## WOOD LEGACY

The sum of \$150, the income of a legacy of Dr. George B. Wood, will be awarded to that member of the junior class who shall stand highest for the junior year.

## JUNIOR ORATOR MEDALS AND MACLEAN PRIZE

Four gold medals, or books of equal value, will be awarded by a committee, appointed by the Board of Trustees, to the four successful competitors in an oratorical contest during Commencement week. The competitors are

eight members of the junior class—four from the Cliosophic and four from the American Whig Societies—selected by committees appointed by the Societies respectively from their own members in the Faculty.

The Maclean Prize, founded by the will of the late Henry A. Stinnecke, Esq., consisting of the sum of \$100, will be given to that one of the orators chosen by the Literary Societies from the junior class who shall during Commencement week pronounce the best English oration.

The committee of judges will be composed of a professor of English and two graduates of the University not members of the Faculty.

#### DICKINSON PRIZE

The Dickinson Prize, founded in 1782 by the Hon. John Dickinson, of New Jersey, Governor of Pennsylvania and Delaware, consisting of a medal of the value of \$60 (or its equivalent in money), will be awarded to that member of the junior class who shall write the best dissertation upon any one of the following themes in logic: The Nature and Validity of Inductive Reasoning; The Theory of Judgment; The Relation of Fact and Theory. The dissertation must be presented on or before May 13.

#### THOMAS B. WANAMAKER ENGLISH LANGUAGE PRIZE

This prize, the yearly interest of \$1,000, will be given to that member of the junior academic class who shall pass the best examination in English philology, and write the best thesis on some assigned topic therein.

#### MARY CUNNINGHAM HUMPHREYS JUNIOR GERMAN PRIZES

Two prizes, of \$25 and \$15 respectively, established by the late Professor Willard Humphreys, in memory of his mother, Mary Cunningham Humphreys, will be awarded to those members of the junior class who, having taken the regular German course for at least two years (all the

courses in the Germanic Section of the Modern Language Department in junior year and either Courses 105, 106 or 201,202) shall, at the close of the second term, pass the best examination on the work of the term.

#### R. PERCY ALDEN MEMORIAL PRIZES

The income of \$1,000, given by John P. C. Alden, Esq., of the Class of 1907, and divided into a first and second prize, will be awarded annually to the two members of the junior French course who shall submit the best essays on a subject relating to French memoirs. The essays must be presented on or before May 15.

#### CLASS OF 1883 PRIZES FOR ENGLISH IN THE SCHOOL OF SCIENCE

Class of 1883 English Prize for Juniors in the Bachelor of Science Course:—This prize, the annual interest of \$1,000, will be given to that member of the junior class, a candidate for the degree of Bachelor of Science, who shall have done the best work in the English studies of the year and submitted the best essay on a subject in English literature assigned by the English Department. The subject for the year 1920-1921 is: The Literary Work of Rudyard Kipling.

Class of 1883 English Prize for Freshmen in the Civil Engineering Course:—This prize, the annual interest of \$1,000, will be given to that member of the freshman class, a candidate for the degree of Civil Engineer, who shall have done the best work in the English studies of the year, and shall have submitted the best essay on a subject assigned by the English Department.

#### STINNECKE PRIZE

The Stinnecke Foundation was established in 1870 by the will of the late Henry A. Stinnecke, of the Class of 1861,

and was supplemented by a bequest received in 1876 from his aunt, Miss Marie Stinnecke. The income is divided between the Stinnecke Scholarship of \$500 and the Maclean Prize of \$100.

The Stinnecke Scholarship, of the annual value of \$500, tenable during the undergraduate course unless forfeited by neglect of study, is given *every third year* "to that person who, having entered the sophomore class, passes the best examination at the opening of the session in September, in the Odes of Horace, the Eclogues of Virgil, and the Latin Grammar and Prosody, as well as the *Anabasis* or *Cyropaedia* of Xenophon and the Greek Grammar." Students of the University who have been members of the freshman class, as well as new students entering the sophomore class, will be admitted to such examination. The committee of examiners is appointed by the Board of Trustees.

The next competition for this scholarship will be held in the autumn of 1920.

#### CLASS OF 1861 PRIZE

The interest of \$1,200, given by the Class of 1861, will be awarded to that member of the sophomore class who shall pass the best examination at the end of the year on the elective mathematics of the sophomore year.

#### FRANCIS BIDDLE SOPHOMORE PRIZE

This prize, the yearly interest of \$500, will be given to that member of the sophomore class who shall write the best English essay of the year.

#### CLASS OF 1870 SOPHOMORE ENGLISH PRIZE

This prize, the yearly interest of \$1,000, will be given to that member of the sophomore academic class who shall pass the best examination on the English studies of the year.

## ORANGE ALUMNI ASSOCIATION PRIZE SCHOLARSHIP

This scholarship, which pays the holder \$200 per annum, the income from \$4,000, given by the Princeton Alumni Association of the Oranges, will be awarded in accordance with the following conditions:

1. Only those are eligible to compete for this scholarship whose parents or family shall at the time of the competition have been resident for at least one year in the district of the Princeton Alumni Association of the Oranges. They shall present themselves for examination at the time of the entrance examinations in September, and shall take the *comprehensive examinations* in the four subjects required for admission under the "New Plan" to a course leading to a bachelor's degree. These papers will not be read for the purpose of determining the winner until after the candidates have been in residence as regular members of the freshman class.
2. The Faculty shall name as winner of the scholarship that student who stands highest in this examination, and as alternate the student who stands next highest. This alternate may become the holder of the scholarship in case of the death or removal of the winner.
3. The scholarship shall be retained by its winner during his freshman and sophomore years, provided that in his studies he maintains a rank not below the second general group and that he does not come under serious discipline for misconduct.

The last competition for this scholarship was held in the autumn of 1919. The next competition will be held in the autumn of 1921. Candidates intending to compete for the scholarship in any year shall notify the Registrar of their intention not later than September 10 of that year.

## THE PRINCETON CLUB OF PLAINFIELD ENTRANCE PRIZE

The Princeton Club of Plainfield, New Jersey, offers a prize of \$50 annually to the resident of Plainfield or North Plainfield who enters the Princeton freshman class with the best examination record, provided he enters without conditions and remains a student in college in regular standing until the Christmas following his entrance.

## REMISSION OF TUITION

Any undergraduate of insufficient means and of good mental ability and serious purpose may apply to the Secretary of the University for remission of tuition. This remission is in the form of a loan, the recipient being required to sign a note for the amount remitted and to subscribe to the following obligations:

I. That he holds himself bound to pay this note in full within one year from date of graduation or of leaving the University, and if not paid within one year the note shall bear interest at 4 per cent per annum from said date of graduation or of leaving.

II. That he give the University successive renewal notes when and as requested.

III. That he keep the University informed of his residence and occupation until this note is paid.

Remission of tuition and renewals are granted for one term and subject to the following conditions:

I. The recipient must be regular in attendance at his college exercises and free from serious discipline.

II. His class standing must not be below the third general group.

III. His board must not exceed \$7.50 a week; and his room, if single, must not be above the third group, nor, if double, above the fifth group, as described under the "Rules Governing the Allotment and Rental of Rooms," (see page 191. Students rooming elsewhere than in the dormitories must not pay more than four dollars a week for rent, including light and heat.

In accepting remission of tuition it is understood that a student agrees to devote his best energies to his studies. If his work shall appear to suffer by reason of participa-

tion in extra-curriculum activities, or if his scale of living shall seem to be out of proportion to his means, he shall forfeit the remission of tuition even though he shall have complied technically with the rules.

Freshmen who have applied before the opening of the college and whose testimonials as to scholarship, character and need are satisfactory, will be granted remission of ninety-five dollars from the charge for tuition for the first term, on admission to the University.

Freshmen whose applications are received after the opening of college and students entering from other colleges, whose testimonials are satisfactory, will be granted remission of sixty dollars from the charge for tuition for the first term.

Sophomores, juniors, and seniors who have not previously applied for remission of tuition but through changed conditions find themselves in need of financial assistance, may apply to the Secretary of the University, provided they have maintained a class standing not below the third general group and have complied with other conditions.

At the opening of the second term freshmen and qualifying students who received remission of tuition and maintained a class standing in the first or second group during the first term will be granted remission of one hundred and twenty-five dollars for the second term; those who maintained a class standing in the third group will be granted remission of ninety-five dollars, and, in special cases, those whose standing was below the third general group may be granted remission of sixty dollars for the second term.

At the opening of each term sophomores, juniors, and seniors who have previously received remission of tuition, have maintained a class standing not below the third general group, and have fulfilled the other conditions, will, on application, be granted a renewal, varying in amount

from sixty to ninety-five dollars a term, in the discretion of the Secretary of the University.

Within the first ten days of each term and before their bills are made out, *applicants for remission of tuition or renewals are required to call at the office of the Secretary of the University* for the necessary order on the Treasurer.

The Secretary of the University is authorized, in his discretion, to remit the full charge for tuition in special cases. This will be done only after a personal interview with the applicant.

Students who have previously held remission of tuition and have maintained a class standing in the first or second general group are eligible for University Scholarships in the sophomore and higher years. There are 10 A scholarships of \$250 each for first group men, and 30 B scholarships of \$225 each for second group men. Award is made according to seniority of class, except that students eligible for A scholarships take preference over all others.

For application blanks apply to the *Secretary of the University, Princeton, New Jersey.*

## SCHOLARSHIPS

### SCHOLARSHIPS FOUNDED BETWEEN 1853 AND 1902 (Income now used for University Scholarships)

In 1853 the Trustees authorized the Faculty to take such measures as might seem to them necessary towards securing a number of scholarships with a principal of one thousand dollars each. Pursuant to this authorization, between 1853 and 1902 sixty-four scholarships with a principal of one thousand dollars each were endowed by John Aitken, E. F. Backus, A. B. Baylis, Charles S. Baylis, James Blair, Isaac V. Brokaw, Mrs. P. Bullard, Hons. Simon and Donald Cameron (1), Aaron Carter, Jonathan Cogswell, D.D., Roswell Colt (3), Stephen Colwell, A. Creswell, Hon. Amzi Dodd (the Bloomfield Scholarship), Aaron Fenton, A Friend, A Friend (the Henry M. Alexander Scholarship), A Friend of President Maclean (the John Maclean Scholarship), Friends of President McCosh (the James McCosh Scholarship), Hon. Henry W. Green, Dudley S. Gregory, Richard T. Haines, Gen. N. Norris Halstead, Albert O. Headley, Dr. Hugh L. Hodge, Capt. Silas Holmes (5), Hon. John P. Jackson, Peter Jacobus, Jacob J. Janeway, D.D., Ladies of the Presbyterian Church of Huntington, N. Y., James Lenox (5), Drs. John and George Maclean (1), J. D. McCord, Frederick Marquand, Members of the Class of 1841, the Class of 1856, Members of the First Presbyterian Church of Bridgeton, N. J., Members of the First Presbyterian Church of Peekskill, N. Y., Members of the First Presbyterian Church of Trenton, N. J., Members of the Second Presbyterian Church of Elizabeth, N. J., George W. Musgrave, D.D., Matthew Newkirk, Dr. Samuel H. Pennington, Hon. Nehemiah Perry, Isaac N. Rankin, Harry E. Richards, M.D.,

George L. Sampson (the Henry J. van Dyke Scholarship), Joseph R. Skidmore, I. S. Spencer, Alanson Trask, Joseph N. Tuttle, Hon. John Van Vorst, William White, and Chandler Withington; and one scholarship with a principal of one thousand five hundred dollars was endowed by Henry M. Flagler.

During the same period twenty-one memorial scholarships with a principal of one thousand dollars each were endowed as follows:

The Cyrenius Beers Scholarship by Miss Julia Beers, the J. S. Bonsall Scholarship by a bequest of Mrs. Susan R. Bonsall, the Albert Dod Brown Scholarship by Mrs. Susan D. Brown, the Grace Newcombe Denning Scholarship by Mrs. William Moir (\$1,500), the Finley and Breese Scholarships by a bequest of Samuel F. B. Morse, the Elizabeth Musgrave Giger Scholarship by Prof. George M. Giger, D.D., the Charles Dickinson Hamill Scholarship by Samuel M. Hamill, D.D., the Matthew B. Hope Scholarship by the Trustees of the College of New Jersey as an acknowledgment of the services of Professor Hope in raising an endowment of over one hundred thousand dollars, the Jeremiah D. Lalor Scholarship by a friend, the Harvey Lindsley Scholarship by Mrs. Mary R. Matthews, the Newark Scholarship by the will of Henry Rogers, the Erza Nye Scholarship by F. Wolcott Jackson, the John Joseph Rankin Scholarship by William Rankin, the Laurance Field Stevens Scholarship by Herbert B. Stevens, the Nathaniel W. Townsend Scholarship by Mrs. Daniel Haines, the William Campbell Truesdell Scholarship by Warren N. Truesdell, the Van Sinderen Scholarship by Mr. and Miss Van Sinderen, the Robert Voorhees Scholarship by Mrs. Susan V. Clark, and the Gertrude N. Woodhull Scholarship by Dr. John N. Woodhull.

In 1913 a bequest of one thousand dollars was received

from the Estate of Mrs. Mary Hale Chamberlain to endow the Hale Scholarship in memory of Titus Hale and Mary H. Hale, his wife.

### UNIVERSITY SCHOLARSHIPS

From the income derived from scholarships founded prior to 1903 forty University Scholarships have been established: ten "A" Scholarships of the annual value of two hundred and fifty dollars each and thirty "B" scholarships of the annual value of two hundred and twenty-five dollars each. During the summer these scholarships will be awarded for the first term to members of the senior, junior, and sophomore classes who are candidates for the degree of Bachelor of Arts, or Bachelor of Science, and who have previously received remission of tuition, in accordance with the following rules:

(a) The ten "A" scholarships will be awarded to those students whose standing during the previous year was in the first general group. If more than ten students are eligible, award will be made according to seniority of class.

(b) The thirty "B" scholarships will be awarded to those students whose standing during the previous year was in the second general group. If more than thirty students are eligible, award will be made according to seniority of class, except that students eligible for "A" scholarships shall take preference over all others.

University Scholarships are awarded in all cases for one term and subject to the following conditions:

I. The holder must be regular in attendance at his college exercises and free from serious discipline.

II. His general group, as shown by his latest semi-annual report, must not be below that in which he stood when the scholarship was awarded to him.

III. His college bill for one term for board, room rent, light, and heat must not exceed two hundred and ten dollars.

A University Scholar who has fulfilled these conditions during the first term of a college year will receive the scholarship for the second term of that year without further action on his part.

### ENDOWED SCHOLARSHIPS

The endowed scholarships described in the following list may be assigned to students in any undergraduate department of the University unless restricted by the donor to some particular department or departments. The annual stipend of each scholarship at present is one hundred and twenty-five dollars unless another amount is stated. It is customary to assign these scholarships, when they become vacant, to undergraduates who have been members of the University for at least one year, and who are considered most worthy to receive the benefit.

Application for endowed scholarships should be made to the Secretary of the University, Princeton, New Jersey.

**THE ELIZABETH VAN CLEVE SCHOLARSHIP:** Founded in 1886, by a gift of two thousand dollars, from Hon. Caleb S. Green, of Trenton, N. J., of the Class of 1837. In 1912 the principal was increased to two thousand five hundred dollars by William E. Green, Esq., of the Class of 1902.

The scholarship is ordinarily assigned to a student in the John C. Green School of Science.

**THE WISTAR MORRIS WOOD AND CHARLES MORRIS WOOD SCHOLARSHIP:** Founded in 1887, by a gift of two thousand dollars from the Rev. Charles Wood, D.D., of Washington, D. C. In 1908 the principal was increased to two thousand five hundred dollars by the donor. The annual stipend is one hundred dollars.

This fund shall ordinarily in the first instance be given to a member of the junior class, or in case no member of the junior class answers the conditions, then to any member

of the lower classes answering them. Conditions: I. To any foreign missionary's son intending himself to become a foreign missionary; II. To any student proposing to labor in the foreign field; III. To any minister's son studying for the ministry. It shall be understood that the recipient of the fund must possess and keep up superior scholarship.

THE RACHEL LENOX KENNEDY SCHOLARSHIP FUND; with an income of six hundred dollars: Established in 1888 by Miss Rachel Lenox Kennedy, of New York, with a principal of five thousand dollars and increased by the donor in 1890 by a further gift of ten thousand dollars. The income from this fund is used to aid meritorious undergraduates in any department of the University who have maintained high standing in their classes.

THE BUTLER SCHOLARSHIP; with an endowment of two thousand five hundred dollars: Founded in 1892 by William Allen Butler, Jr., of New York, of the Class of 1876, with a gift of one thousand dollars, which has since been increased to two thousand five hundred dollars.

THE McCORMICK SCHOLARSHIP; a gift of two thousand dollars: Founded in 1894 by Mrs. Cyrus Hall McCormick, of Chicago. The annual stipend is one hundred dollars.

THE WALLACE SCHOLARSHIPS; (two with an income of one hundred and twenty-five dollars each): In 1898 Mrs. R. H. Allen and Miss Wallace, of Newark, N. J., gave five thousand dollars to found two scholarships in memory of their father, William C. Wallace, of the Class of 1823, for the benefit of needy students.

THE JOHN LINN PATTON SCHOLARSHIPS: Founded in 1903, with a principal of two thousand five hundred dollars, by Mr. and Mrs. William A. Patton, of Philadelphia, in memory of their son, John Linn Patton, of the Class of 1903.

THE MAHLON LONG SCHOLARSHIP: Founded in 1904 by Rev. George Wells Ely, of Columbia, Lancaster County, Pa., by a gift of one thousand two hundred and fifty dollars and real estate in Minneapolis, Minn., and Jersey City, N. J., valued at eight thousand seven hundred and fifty dollars.

This scholarship is open to undergraduates, members of either the Academic or Scientific Department, and is intended to be given during the entire course to the same student, although appointments or reappointments may be changed by the person having the power, in his discretion. The donor may, during his life, designate the beneficiary, but in case he should not do so on or before October first of each year, then the President of the University shall designate the beneficiary, selecting a regularly matriculated candidate for a degree, who, in his judgment, is a young man of limited means, of worthy character and capacity, and who gives promise of a useful life. The net income from this scholarship will be used by the beneficiary for tuition and other necessary expenses, but no more than four hundred dollars shall be paid to any one beneficiary annually; whatever excess income there may be to accrue to the benefit of the fund. The annual stipend is at present three hundred and fifty dollars.

THE JOHN H. CONVERSE AND JOHN W. CONVERSE SCHOLARSHIPS (two, an income of one hundred and twenty-five dollars each): Founded in 1904 by the late John H. Converse, with a principal of five thousand dollars. The privileges of these scholarships are to be extended by the Faculty to students looking forward to a seminary course and the Christian ministry, the Presbyterian ministry preferred.

THE ROBERT STOCKTON PYNE SCHOLARSHIP: Founded in 1904, with a principal of two thousand five hundred dol-

lars, by Mrs. M. Taylor Pyne, of Princeton, in memory of her son, Robert Stockton Pyne. The annual stipend is one hundred dollars.

THE FREDERICK WOLCOTT JACKSON SCHOLARSHIP: Founded in 1905, by a gift of two thousand five hundred dollars from Philip N. Jackson, of Newark, N. J., of the Class of 1881.

THE ANDREW WHITE GREEN SCHOLARSHIP; with an income of two hundred and fifty dollars: Founded in 1905, with a principal of five thousand dollars, by the late Cornelius C. Cuyler, of the Class of 1879, as executor and sole legatee of Andrew White Green. The income is to be used in aiding some needy and deserving student each year through his college course; the student to be designated by the President or Dean.

THE HENRY S. GANSEVOORT SCHOLARSHIP: Founded in 1906, with a principal of two thousand five hundred dollars, by Mrs. Abraham Lansing, of Albany, N. Y., in memory of her brother, Henry S. Gansevoort, of the Class of 1855.

THE CLASS OF 1878 SCHOLARSHIPS: Dr. John S. Sayre, of the Class of 1878, who died in 1899, made Princeton University his residuary legatee. After creating the Fellowship of Applied Chemistry and the Fellowship of Applied Electricity, the will directs "the balance of my estate, if any, to be used for as many as possible endowed scholarships in the Academic (Classical) Department of the University which are to be known as the Class of 1878 Scholarships." At present there are five scholarships of one hundred and forty-five dollars each under this endowment.

THE GEORGE BLACK REA SCHOLARSHIP; with a principal of two thousand five hundred dollars: Founded in 1908 by Mr. and Mrs. Samuel Rea, of Bryn Mawr, Pa., in memory of their son, George Black Rea, of the Class of

1904. Preference to be given to a student of the Department of Civil Engineering.

**THE DR. ANDREW J. McCOSH MEMORIAL SCHOLARSHIPS:** Founded in 1909 with the principal of ten thousand dollars by the late Mrs. Alexander Maitland in memory of her brother, Andrew J. McCosh, M.D., of the Class of 1877. Preference is given to students in the senior and junior classes. At present there are two scholarships of one hundred and twenty-five dollars each and two scholarships of one hundred and twenty dollars each under this endowment.

**THE JOHN WITHERSPOON SCHOLARSHIP;** with an income of one hundred and sixty dollars: Founded in 1909 by the Trustees of the Witherspoon Memorial Association with a gift of four thousand dollars, the unexpended balance of a fund contributed by patriotic citizens for the purpose of erecting a statue in Washington, D. C., to President John Witherspoon.

**THE S. STANHOPE ORRIS FUND:** Professor S. Stanhope Orris, who died in 1905, bequeathed to Princeton University "the sum of Twenty-five Thousand Dollars (\$25,000) as a fund, the annual income of which will be divided equally among ten needy academic students of good character and ability, of diligence in study, and exemplary behavior. No candidate for the ministry, how ver, though needy, studious and possessing ability, shall receive help from this fund unless he pledge himself to continue and do continue the study of Greek regularly to the end of the university course." There are ten scholarships of one hundred and twenty dollars each.

**THE SUSAN BREESE PACKARD MEMORIAL SCHOLARSHIP AND THE FRANCIS APPLETON PACKARD MEMORIAL SCHOLARSHIP:** Founded by a bequest of five thousand dollars under the will of Professor William A. Packard, who died in

1909. "The income of these scholarships is to be devoted to paying the tuition fees of students in Princeton University pursuing courses of study of which the Greek and Latin languages and literature shall constitute a substantial part. Students of approved scholarship and character who need this aid, and such only, shall be eligible to receive the same."

THE THOMAS AND LUCY KAYE MEMORIAL SCHOLARSHPS; two, with an income of ninety dollars each: Founded in 1911 by a bequest of five thousand dollars under the will of John William Kaye, of the Class of 1874.

THE WILLIAM ROME GELSTON SCHOLARSHIP; with an income of two hundred and twenty-five dollars: Founded in 1912 with a gift of \$5,000 in memory of William R. Gelson, deceased, of the Class of 1901, "the net annual income thereof to be given in each year to such student in the Academic Department of Princeton University regularly matriculated for a degree, as the President of the University shall consider to be a person of capacity and worthy character, who gives promise of a useful life and is of limited means, such appointee to be designated by said President, and such income shall be used by such appointee, first in the payment of his tuition fees, and the balance shall be used by him in payment of his board and other necessary university expenses."

THE JOHN REID CHRISTIE, JR., SCHOLARSHIP: Endowed in 1913 with the principal of twenty-five hundred dollars, received from the estate of John Reid Christie, Jr., of the Class of 1913. The annual stipend is one hundred dollars.

THE NOEL BASSETT SCHOLARSHIP: Founded in 1915 with a gift of twenty-five hundred dollars, by friends of the late Noel Bassett of the Class of 1911. By the deed of gift, the right to recommend the removal of the incumbent of this scholarship rests with the committee representing the

donors, until 1940. The annual stipend is one hundred dollars.

**ARTHUR L. WHEELER MEMORIAL SCHOLARSHIP:** Founded in memory of Arthur Ledlie Wheeler, Class of 1896; to be held four years and paying \$500. a year during freshman and sophomore years, and \$400. a year during junior and senior years; awarded to that entering candidate who in the opinion of the Scholarship Committee most nearly satisfies the qualifications required by the Rhodes Scholarships. These are:

"In accordance with the wish of Mr. Rhodes, the Trustees desire that in the selection of a student to a Scholarship regard shall be had to (1) his literary and scholastic attainments; (2) his fondness for and success in manly outdoor sports, such as cricket, football and the like; (3) his qualities of manhood, truth, courage, devotion to duty, sympathy for and protection of the weak, kindliness, unselfishness and fellowship; and (4) his exhibition during school days, of moral force of character and of his instincts to lead and take an interest in his schoolmates."

To these has been added by the Committee, (5) need of financial assistance, although the Scholarship is not limited to boys needing such assistance. For particulars apply to Dr. Charles Browne, Princeton, N. J.

**THE CLASS OF 1894 MEMORIAL FUND:** Founded in 1919 by the members of the Class of 1894 upon the occasion of the twenty-fifth anniversary of their graduation from Princeton University.

The income from the Fund shall be applied to assist deserving students, the extent of the assistance given to be within the discretion of the University; provided that in no case shall more than \$500 be granted to any one student in a single year. In administering the Fund preference shall be given to descendants of members of the Class of 1894.

THE E. B. KENYON SCHOLARSHIP: Endowed in 1919 with a principal of twenty-five hundred dollars from the bequest of Mr. Job Kenyon in memory of Edwin Bowne Kenyon of the Class of 1895.

THE EVERETT LAKE CRAWFORD, JR., SCHOLARSHIP: Founded in 1919 with a gift of five thousand dollars by Mr. Everett Lake Crawford of the Class of 1901 in memory of his son Everett L. Crawford, Jr.

THE GORDON FORBES MEMORIAL SCHOLARSHIP: Founded in 1919, with a principal of ten thousand dollars, by Mr. and Mrs. John M. Forbes and Mrs. Gordon Forbes in memory of Gordon Forbes, Class of 1905. Awarded preferably to a student in the School of Engineering or the School of Electrical Engineering.

THE SAMUEL DWIGHT BREWSTER MEMORIAL SCHOLARSHIP: Founded with a gift of six thousand dollars by Mrs. Samuel Dwight Brewster in memory of her husband.

#### REGIONAL SCHOLARSHIPS

THE PRINCETON CLUB OF CHICAGO UNDERGRADUATE SCHOLARSHIP: Endowed by the Princeton Club of Chicago and open to men in Chicago and upper Illinois. The fund available is six hundred dollars for the four years of the undergraduate course, the holder being permitted to draw on the amount annually as his needs may require with the understanding that he will sign notes payable at his convenience after completing his course. Awards are made by a committee of the Princeton Club of Chicago.

THE ROCKY MOUNTAIN PRINCETON CLUB SCHOLARSHIP; with a stipend of two hundred and fifty dollars a year: Awarded for the freshman year to the winner of a competition open to students entering from the high schools in the city and county of Denver or other accredited high

schools of the territory covered by the Rocky Mountain Princeton Club. The competition is held and the award is made by the Scholarship Committee of the Rocky Mountain Princeton Club, Denver, Colo.

**PRINCETON ALUMNI ASSOCIATION OF WESTERN PENNSYLVANIA SCHOLARSHIPS:** Ten or more scholarships, each paying \$250 per year for four years, are open to members of the graduating class in accredited high and private schools within the territory covered by the Association, which in general embraces Western Pennsylvania, Eastern Ohio and West Virginia. All awards are made on a competitive basis, after full investigation by the Scholarship Committee of the Association. Further information may be obtained from the Secretary, W. E. Hague, Esq., Jones Law Building, Pittsburgh, Pa.

**PHILADELPHIA DISTRICT REGIONAL SCHOLARSHIP:** Offered by the Princeton Club of Philadelphia each year and paying \$250. a year: Awarded on the Rhodes Scholarship plan and open for competition to candidates needing financial assistance and entering Princeton from any school within the district embracing in general Atlantic City, N. J., to Harrisburg, Pa., and Morrisville, Pa., to Wilmington, Del.

For particulars apply to Mr. H. C. Potter, Jr., Chairman, Scholarship Committee, 1223 Locust St., Philadelphia, Pa.

**PRINCETON CLUB OF SOUTHERN CALIFORNIA REGIONAL SCHOLARSHIP:** Awarded on the Rhodes Scholarship plan and paying \$250. a year for four years. For particulars apply to Mr. D. S. Hammack, 419 American Bank Building, Los Angeles, California.

**NEW YORK AND VICINITY SCHOLARSHIP:** Founded in 1918 by members of the Princeton Club of New York, and alumni of New York, Long Island and Westchester, and open to candidates from this region.

The stipend is \$250 for four years, and is awarded by the Scholarship Fund Committee, under the Rhodes Scholarship plan.

For particulars apply to Mr. Joseph R. Truesdale, Chairman, 149 Broadway, New York City.

**PRINCETON ALUMNI ASSOCIATION OF NORTHERN NEW JERSEY SCHOLARSHIP:** Founded by the Association and open to residents of Bergen County, New Jersey, who appear before the Scholarship Committee of the Association. The income (\$200) is available during Freshman and Sophomore years, and is awarded annually.

**THE JOHN A. MCGINLEY SCHOLARSHIP:** Founded in 1916 from the residuary estate of Mr. John A. McGinley and contributions of friends. Open to candidates residing in the vicinity of Reading, Pa., who have qualified for admission to Princeton University, or who are already admitted and have shown satisfactory progress.

By the deed of gift, the committee of award must consist of three Princeton alumni appointed by the President or the Trustees of Princeton University.

For particulars apply to Mr. Robert S. Birch, Principal of the High School for Boys, 8th and Washington Sts. Reading, Pa.

**THE NATHANIEL EWING MEMORIAL SCHOLARSHIP:** Founded in 1919 by Mr. William K. Ewing, '04, in memory of his father the Hon. Nathaniel Ewing, of the Class of 1869, by the gift of ten thousand dollars. Open to candidates from the region of the San Antonio, Texas, Alumni Association.

For particulars apply to the Secretary of the University.

**THE WILLIAM P. AND MARGARET H. FULLER MEMORIAL SCHOLARSHIP:** Founded in 1919 with a gift of ten thousand dollars by Mrs. Ella F. Brawner in memory of her parents

and open to that entering candidate from the State of California who in the opinion of the Scholarship Committee most nearly satisfies the qualifications required by the Rhodes Scholarships. For particulars apply to the Secretary of the University.

**THE HAROLD KIMBALL MEMORIAL SCHOLARSHIP FUND:** Founded in 1919 by Mr. Walter D. Kimball, Mr. W. Irving Kimball, Miss Grace L. Kimball, Miss Emily C. Richards with a gift of five thousand dollars in memory of their brother, Harold Kimball of the Class of 1909.

The Scholarship is open to candidates from the schools of Philadelphia county or of the territory within a radius of twenty miles from the center of Philadelphia, who need the financial assistance.

The Scholarship is awarded by the Princeton Club of Philadelphia subject to the right of the University to designate some other method of selection.

For further particulars apply to Mr. H. C. Potter, Jr., 1223 Locust St., Philadelphia, Pa.

**PRINCETON ALUMNI ASSOCIATION OF THE NORTHWEST SCHOLARSHIP:** Founded in 1920 by the Princeton Alumni Association of the Northwest with a gift of five thousand dollars. Available to candidates from the states of Minnesota, North Dakota and South Dakota.

**THE CHARLES D. SPENCER SCHOLARSHIP:** Founded by the Princeton Alumni Association of Erie, Pennsylvania, in memory of Charles D. Spencer, of the Class of 1908. The Scholarship, which pays to the holder the sum of \$250 during his freshman year, is open to candidates residing in Erie County, Pennsylvania. The award is made by a committee appointed by the Princeton Alumni Association of Erie.

For particulars, apply to Mr. S. A. Sisson, Secretary, 409-10 Marine Bank Building, Erie, Pa.

PRINCETON ALUMNI ASSOCIATION OF THE NORTHWEST SCHOLARSHIP: Founded with a gift of five thousand dollars by the Princeton Alumni Association of the Northwest, and available to candidates residing in the region of the Association, viz., Minnesota, North Dakota and South Dakota.

#### WAR MEMORIAL SCHOLARSHIPS

THE SAMUEL JACKSON REID, JR., MEMORIAL SCHOLARSHIP FUND: Founded in 1919 in his memory by the classmates and friends of Lieutenant Samuel Jackson Reid, Jr., President of the Class of 1906, who was killed in action in France, August 22, 1918.

The Samuel J. Reid Scholarships are four in number, one to each college class, and are awarded on the general principles of the Rhodes Scholarships, to perpetuate the memory of Lieutenant Reid's "virility and all-round manhood by aiding men of his type to acquire the benefits of a college education."

The Fund is managed and the Scholarships are awarded by a board of seven trustees.

For further particulars address Mr. S. G. Etherington, Secretary of the Trustees, the Samuel Jackson Reid, Jr., Memorial Scholarship Fund, 50 East 42nd St., New York City.

THE WARDEN MCLEAN MEMORIAL SCHOLARSHIP FUND: Founded in 1919 with a gift of thirty thousand dollars by Mr. William L. McLean in memory of his son Lieutenant Warden McLean of the Class of 1912 who was killed in line of duty at Fort Oglethorpe, Ga., June 29, 1917.

The Fund is established in remembrance not only of Lieutenant McLean's "sterling manhood, the courage of his patriotic instinct and his fine sense of duty, but also of his helpful and sympathetic disposition toward other men in all walks of life." It is to be used "to assist men

of like character and aims in obtaining an education at Princeton University."

The method of selecting the beneficiaries, the amounts to be awarded to any one student in a given year, and all terms and conditions under which this assistance is to be tendered, are to be determined by the University.

Applicants must come from schools in Pennsylvania and New Jersey, preference normally being given to applicants from schools in Philadelphia County or of the territory within thirty miles from the center of the City of Philadelphia.

The scholarships are awarded "in accordance with the general principle that qualities of character, leadership, physical fitness and general ability shall be considered as well as proficiency in studies."

For further information apply to the Secretary of the University.

**THE BENJAMIN BULLOCK III MEMORIAL SCHOLARSHIP FUND:** Founded in 1919 by friends with a gift of ten thousand dollars in memory of Benjamin Bullock of the Class of 1916, who was killed in action in France, September 29, 1918. The scholarship is open to candidates from the schools of Philadelphia county or of the territory within a radius of twenty miles from the center of Philadelphia, who need the financial assistance. The Scholarship is awarded in accordance with the principles of the Rhodes Scholarship plan.

For further particulars apply to Mr. H. C. Potter, Jr., 1223 Locust St., Philadelphia, Pa.

**THE HAROLD KIDDER BULKLEY MEMORIAL SCHOLARSHIP:** Founded in 1919 with a gift of five thousand dollars by Mr. Edwin M. Bulkley in memory of his son Lieutenant Harold Kidder Bulkley of the Class of 1919, who died in service February 18, 1918, in England.

THE ROBERT GRANGER BENSON MEMORIAL SCHOLARSHIP: Founded in 1919 with a gift of ten thousand dollars by Mr. R. D. Benson in memory of his son Robert Granger Benson of the Class of 1915, who died in service in France in 1918.

Open to a graduate of any school in Passaic, New Jersey and awarded by a Scholarship Committee selected by the founder. For particulars apply to the Secretary of the University.

THE GEORGE NORTON MILLER, JR., MEMORIAL SCHOLARSHIP: Founded in 1919 with a gift of five thousand dollars, by Dr. George Norton Miller in memory of his son Lieutenant George Norton Miller, Jr., of the Class of 1910, who died in service in Germany, (American Army of Occupation) March 27, 1919.

THE JAMES JACKSON PORTER MEMORIAL SCHOLARSHIP: Two scholarships founded with a gift of ten thousand dollars by Mr. William H. Porter in memory of his son Lieutenant James Jackson Porter, Class of 1911, who was killed in action in France on October 5, 1918.

THE GALBRAITH WARD MEMORIAL SCHOLARSHIP: Founded with a gift of five thousand dollars by Mrs. Roderick Terry, Mrs. Harold Godwin, Mrs. Alan Fullerton, Mrs. J. Seymour Mellor, Mr. Henry Marquand and Mr. Allan Marquand in memory of Sergeant Galbraith Ward, Class of 1915, who died in service in France, December 17, 1918.

THE ARTHUR BLUETHENTHAL SCHOLARSHIP: Founded with a bequest to the University of two thousand dollars from Pilote-Aviateur Arthur Bluthenthal, Class of 1913, who was killed in action in France, June 5, 1918. The bequest has been assigned as a Scholarship in his memory.

THE WILLIAM CLARKSON POTTER SCHOLARSHIP:

Founded with a gift of five thousand dollars by Mrs. Frederick Allien, in memory of her nephew Lieutenant William Clarkson Potter of the Class of 1919, who was killed in action in France, October 10, 1918.

**THE CHARLES McGHEE TYSON MEMORIAL SCHOLARSHIP:** Founded with a gift of ten thousand dollars by Mrs. Charles McG. Tyson in memory of her husband, Lieutenant (junior grade) Charles McGhee Tyson, Class of 1912, who was killed in line of duty at sea, October 11, 1918. Open preferably to candidates from Tennessee.

**THE TINGLE W. CULBERTSON MEMORIAL SCHOLARSHIP:** Founded with a bequest of five thousand dollars from Lieutenant Tingle W. Culbertson, Class of 1911, who was killed in action in France, October 1, 1918. The bequest has been assigned as a scholarship in his memory.

**THE KENNETH SAWYER GOODMAN MEMORIAL SCHOLARSHIP:** Founded in 1920 with a gift of ten thousand dollars by Mr. and Mrs. William O. Goodman in memory of their son, Lieutenant (senior grade) Kenneth Sawyer Goodman, of the Class of 1906, who died in service, November 30, 1918, at Chicago, Ill. Awarded preferably to candidates from Chicago, Ill., and then to candidates from the West.

**THE WILLIAM CLINTON STORY MEMORIAL SCHOLARSHIP:** Founded in 1920 with a gift of five thousand dollars by Mr. and Mrs. Fred. E. Story in memory of their son, Cadet William Clinton Story of the Class of 1913, who was killed in line of duty, February 26, 1918, at Park Field, Memphis, Tenn.

Open to candidates from the Schools of Nassau County, N. Y., preferably those of Freeport, N. Y.

**THE ARTHUR VANDERVOORT SAVAGE MEMORIAL SCHOLARSHIP:** Founded in 1920 with a gift of ten thousand dollars, by his family in memory of Lieutenant Arthur Vandervoort

Savage, of the Class of 1917, who was killed in action in France, July 16, 1918.

**THE JAMES DANA PAULL MEMORIAL SCHOLARSHIP:** Founded in 1920 with a gift of five thousand dollars by Mr. James R. Paull, in memory of his son, Lieutenant James Dana Paull, of the Class of 1917, who was killed in line of duty in France, December 20, 1917.

**THE HOBART AMORY HARE BAKER MEMORIAL SCHOLARSHIP FUND:** Founded in 1920 by Mr. Alfred T. Baker with a gift of twenty-five thousand dollars in memory of his son, Captain Hobart Amory Hare Baker, of the Class of 1914, who was killed in line of duty in France, December 21, 1918.

**THE EDWIN THORP VAN DUSEN MEMORIAL SCHOLARSHIP:** Founded with a gift of seven thousand dollars by the relatives of Lieutenant Edwin Thorp Van Dusen of the Class of 1915, who was killed in action, September 29, 1918, in France.

The Scholarship is awarded by the Princeton Club of Philadelphia, in accordance with the general principles of the Rhodes Scholarships, preferentially to applicants who are either nephews or first cousins of Lieutenant Van Dusen, and in the absence of such applicants, to candidates from the schools of Philadelphia County.

For further particulars, apply to Mr. H. C. Potter, 1223 Locust Street, Philadelphia, Pa.

## ENDOWMENT AND ADMINISTRATION OF SCHOLARSHIPS

1. An Undergraduate Scholarship may be endowed by the payment to the Treasurer of the University of a sum not less than five thousand dollars. Unless otherwise specified by the donor the endowment of a scholarship will be invested with the general funds of the University and the incumbent will receive as his stipend the income of the endowment at the average prevailing annual rate of interest.

2. Regional Scholarships are founded to assist applicants satisfying the considerations named in paragraph 4, who are residents of the regions or locations specified in the terms of the Scholarships, and who without financial assistance might not be able to secure the advantages of an education at Princeton University.

They are awarded by the University either (1) upon recommendation of committees appointed ordinarily by the local Princeton Alumni Association covering the region or locality designated in any particular Scholarship; or (2) upon nomination of the donor, if an individual, during his or her lifetime, or if an Association, Class, Club or other group, for a period of twenty-five years. At the end of this time, or at the death of the donor, the right of nomination reverts and rests with the University, unless otherwise provided. If in any year an incumbent is not nominated, the award may be made by the University.

3. War Memorial Scholarships are founded in memory of Princeton men who died in the service of their country, or that of the Allies, in the World War.

They are awarded by the University to applicants in need of financial assistance who satisfy the further considerations named in paragraph 4. The right to nominate an incumbent, however, rests with the donor, if an in-

dividual, during his or her lifetime, or if an organization such as an Alumni Association, Class, Club, or group, for a period of twenty-five years. At the end of this period, or at the death of the donor, the right of nomination reverts to and rests with the University, unless otherwise provided. If in any year the donor or organization does not nominate an incumbent the award may be made by the University.

4. The further considerations governing awards are in general those of the Rhodes Scholarships, namely:

a. The candidate's scholastic attainment.

b. His qualities of manhood, truthfulness, courage, devotion to duty, kindness, unselfishness, fellowship and sympathy for and protection of the weak.

c. His exhibition of moral force of character and of the instincts of leadership.

d. His fondness for and success in manly outdoor sports.

5. Unless otherwise specified by the donor tenure is for one year and renewable, subject however to the observance of the regulations hereinafter stated.

a. A Scholar must be regular in attendance on college exercises and free from serious discipline.

b. A Scholar must maintain a class standing not below the third general group.

c. A Scholar's style of living must be free from extravagance; he may not apply his stipend to pay for his board more than the regular charge for board at the University Dining Halls, or if a member of a club, more than the regular charge at that club for board only; and his room if single must not be above the third group as described in the University Catalogue.

d. All Scholarships shall be held subject to such additional rules as may be adopted from time to time by the Faculty of the University.

## FUNDS FOR CANDIDATES FOR THE MINISTRY

THE RICHARDS FUND: A bequest of Mrs. Esther Richards, of New York, amounting to \$2,970.32, for the benefit of candidates for the ministry. Received in 1790.

THE LESLIE FUND: A bequest of James Leslie, of New York, of the Class of 1759, amounting to \$10,677.49, for "the education of poor and pious youths with a view to the ministry of the Gospel in the Presbyterian Church." Received in 1792.

THE HODGE FUND: A bequest of Hugh Hodge, of Philadelphia, of a house and lot on Market Street, above Second (No. 205) "to be held by the Trustees in trust, to lease out from time to time, and the rents to be applied to the support and education of pious youths for the ministry." Received in 1805.

For application blanks for aid from the funds for candidates for the ministry apply to the Secretary of the University, Princeton, New Jersey.

## CHARITABLE FUNDS

THE VAN ARSDALE FUND: A bequest of Robert Van Arsdale, of Newark, N. J., of the Class of 1826, amounting to \$3,000, "in trust for promoting charitable instruction in the College of New Jersey, according to the discretion of the Faculty." Received in 1875.

Applications for aid from the Van Arsdale Fund should be made to Professor Howard McClenahan, Dean of the College.

## BUREAU OF STUDENT SELF-HELP

The Bureau of Student Self-Help is managed under the direction of the Secretary of the University, for the purpose of providing opportunities for remunerative employment to students who must earn part of their college expenses. All students who are obliged to earn money during their college course are advised to register with this Bureau.

Further information may be obtained from Mr. George McF. Galt, Secretary of the Bureau of Student Self-Help, 32 Mercer St., Princeton, N. J.









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